

Aleksall 347
06-10-18
80-180
!

1) $-2(-3)$

2) $2(4)$

3) $-2(4)$

4) $4(-6)$

5) $\frac{-10}{-2}$

6) $\frac{10}{5}$

7) $\frac{-10}{5}$

8) $\frac{8}{-2}$

9) $4-9$

10) $-4-9$

11) $-4+9$

12) $-4+4$

13) $-4-4$

14) $-2+(-7)$

15) $-2-(-7)$

16) $4-(-4)$

17) $4+(-4)$

18) $-6-(-3)$

19) $\frac{0}{5}$

20) $\frac{5}{0}$

21) $(-2)^2$

22) $(-2)^3$

23) -3^2

24) -5^4

25) $| -4 |$

26) $| 5 |$

27) $| 0 |$

28) $| -3 |$

29) $| -5 |$

30) $| -3-7 |$

31) $| -5+1 |$

32) $| -5+9 |$

33) $\sqrt{4}$

34) $\sqrt{81}$

35) $\sqrt{100}$

36) $\sqrt[3]{8}$

37) $\sqrt[3]{27}$

38) $\sqrt[3]{64}$

39) $\sqrt[3]{1000}$

40) $\sqrt{20}$

41) $\sqrt{50}$

42) $\sqrt[3]{16}$

43) $\sqrt[3]{24}$

44) $\sqrt{-9}$

45) $\sqrt{-25}$

46) $\sqrt{-100}$

47) $\sqrt{-20}$

48) $-\sqrt{-50}$

49) $\sqrt{\frac{1}{4}}$

50) $\sqrt{\frac{4}{9}}$

51) $\sqrt[3]{\frac{8}{27}}$

52) $125^{\frac{2}{3}}$

53) $25^{\frac{3}{2}}$

54) $(\frac{1}{125})^{-\frac{2}{3}}$

55) $(\frac{3}{4})^{-2}$

20

$$56 \quad 5 + 18 + 9 \div 3$$

$$57 \quad 2 \cdot 5 - 16 \div 4 + 1$$

$$58 \quad [(10 + 4) \div 7 - 3] \cdot 2$$

$$59 \quad 10 + 6^2 \div 3$$

$$60 \quad 2 + 3^2 \cdot 5$$

$$61 \quad 2 + 3 \cdot 4 - 12 \div 3$$

$$62 \quad 2[(12 + 6) \div 6 - 3]$$

$$63 \quad 10 + 6^2 \div 4$$

$$64 \quad 10 \div 2 + 3 + 3 \cdot 5$$

$$65 \quad 2[(6 + 4) \div 2 - 3]$$

$$66 \quad 3 + 16 \div 2^3$$

$$67 \quad 4 \cdot 5 - 10 \div 2 + 1$$

$$68 \quad 10 + 15 \div 3 + 2 \cdot 5$$

$$69 \quad 10 \div [(15 - 13) \cdot 8 - 11]$$

$$70 \quad [(21 + 9) \cdot 2] \div 3$$

$$71 \quad 2 + 2 \cdot 5 - 50 \div 5$$

$$72 \quad 2 + 2 \cdot 3^2$$

$$73 \quad 4 + 6^2 \div 3$$

$$74 \quad 2[2 + (8 + 10) \div 2]$$

31

75 $A = \pi r^2$, $r = 5$

76 $A = \pi r^2$, $\pi = 3.14$, $r = 6$

77 $C = \pi D$, $D = 10$

78 $C = \pi D$, $\pi = 3.14$, $D = 8$

79 $C = 2\pi r$, $r = 3$

80 $C = 2\pi r$, $\pi = 3.14$, $r = 8$

81 $A = LW$, $L = 10$, $W = 8$

82 $A = \frac{1}{2}BH$, $B = 10$, $H = 4$

83 $P = 2L + 2W$, $L = 12$, $W = 4$

84 $-b + 8c$, $b = 4$, $c = -4$

85 $P = s_1 + s_2 + s_3$, $s_1 = 3$, $s_2 = 4$, $s_3 = 6$

86 $x^2 + 7x - 6$, $x = -10$

87 $-2x^2 - 3x + 1$, $x = -4$

88 $2(x-3)^2 + 4$, $x = 1$

89 $\sqrt{2x+1}$, $x = 40$

90 $|2x-9|$, $x = 2$

91 $\frac{2x-8}{3x+2}$, $x = -2$

$$(92) A = P - PD$$

$$P = 50000$$

$$D = 95\%$$

$$(93) A = P + PRT$$

$$P = \$50,000$$

$$R = 8\%, T = 10$$

$$(94) (x-3)(x-4), \quad x = 2$$

$$(95) (x-4)(x+5), \quad x = 4$$

$$(96) (x-2)(x-7), \quad x = 7$$

$$(97) (x-1)(x-3), \quad x = -2$$

$$(98) (x-3)(x-5), \quad x = -3$$

$$(99) 2x(x-3), \quad x = 0$$

$$(100) 2x(x+5), \quad x = -5$$

$$(101) 2x(x-3), \quad x = -2$$

$$(102) -2x(x-5), \quad x = 0$$

$$(103) x^2 - 16, \quad x = -4$$

$$(104) x^2 - 9, \quad x = 3$$

$$(105) 2(x-7)^2 + 9, \quad x = 7$$

$$(106) 3(x+4)^2 - 9, \quad x = -4$$

$$(107) 2(x+1)^2 - 3, \quad x = 2$$

(4)

5.

108 $\frac{29}{4}$ write as a mixed number

109 $4\frac{2}{7}$ write as an improper fraction

110 $\frac{85}{100}$ simplify

111 29.43% write as a decimal

112 0.297 write as a percent

113 2479.31 write in scientific notation

114 0.0007512 write in scientific notation

115 $2479.35 \div 1000$

116 457.9351×1000

117 48 and 32 find GCF

118 $\frac{3}{20}$ write as a percent

119 28% write as fraction simplified

120 $\frac{7}{10} + \frac{1}{4}$

121 $\frac{4}{5} \cdot \frac{10}{8}$

122 $\frac{3}{7} \cdot \frac{2}{5}$

123 $\frac{3}{10} \div \frac{6}{5}$

124 $\frac{2}{-5} \div \frac{3}{10}$

$$(125) \quad \frac{5}{-12} - \frac{1}{9}$$

$$(126) \quad \frac{1}{6} - \frac{1}{4}$$

$$(127) \quad \frac{\frac{5}{6}}{\frac{8}{9}}$$

$$(128) \quad \frac{1}{16} - \frac{1}{2} \cdot \frac{1}{2}$$

$$(129) \quad \frac{3}{20} - \frac{2}{3} \div \frac{8}{3}$$

$$(130) \quad \frac{3}{40} + \frac{1}{2} \cdot \frac{1}{5}$$

$$(131) \quad \frac{7}{18} + \frac{3}{5} \div \frac{27}{5}$$

6

$$(132) \quad x+1=3$$

$$(133) \quad x+8=3$$

$$(134) \quad x+y=-2$$

$$(135) \quad x+3=3$$

$$(136) \quad 2x=8$$

$$(137) \quad -2x=-10$$

$$(138) \quad -2x=4$$

$$(139) \quad 2x+1=11$$

$$(140) \quad -2x+2=10$$

$$(141) \quad 60=5x+5$$

$$(142) \quad 3x=33$$

$$(143) \quad 20=4x-12$$

$$(144) \quad -9-3x=-21$$

$$(145) \quad -5x+9=44$$

$$(146) \quad 3x+10=100$$

$$(147) \quad -2x+13=43$$

$$(148) \quad 4x+1=6x+21$$

$$(149) \quad 2(x+1)=3x-77$$

$$(150) \quad 4(2x+1)=3x+4$$

$$(151) \quad -8+5x=-28$$

7.

$$(152) \quad \frac{3}{4} = \frac{x}{24}$$

$$(153) \quad \frac{11}{20} = \frac{x}{100}$$

$$(154) \quad \frac{13}{676} = \frac{x}{416}$$

$$(155) \quad \frac{28}{50} = \frac{x}{100}$$

$$(156) \quad \frac{3}{30} = \frac{x}{100}$$

$$(157) \quad \frac{2}{3}x = 600$$

$$(158) \quad \frac{2}{5}x = 20$$

$$(159) \quad -\frac{2}{3}x = 120$$

$$(160) \quad \frac{x}{3} = 40$$

$$(161) \quad \frac{x}{-2} = 60$$

$$(162) \quad \frac{x}{6} + 1 = \frac{x}{2} - 1$$

$$(163) \quad \frac{5x}{6} + 5 = \frac{5x}{2} - 5$$

$$(164) \quad 2.25x + 100 = 2.20x + 900$$

$$(165) \quad 3.40x + 10 = 3.30x + 490$$

(8)

166 $h = \frac{A}{4}$ $A =$

9.

167 $x + y = m$ $y =$

168 $4x + 2y = 10$ $y =$

169 $2x + 4y = 12$ $y =$

170 $A = 4B + 5C$ $C =$

171 $\frac{a}{2} = c$ $a =$

172 $y - 7 = x$ $y =$

173 $x + 3y = 12$ $y =$

174 $m = 2x + 2y$ $y =$

$$(175) -3x + 8x$$

$$(176) -9x - (-2x)$$

$$(177) 4x - 2(3x - 1)$$

$$(178) 5x - 4(6y - 2x) + 2y$$

$$(179) -6x^2 - 3x + 10 - 2x^2 + 5x - 12$$

$$(180) (-2x^2 - 3x - 7) + (4x^2 - 8x + 1)$$

$$(181) (-2x^2 - 6x - 7) - (5x^2 + 8x + 2)$$

$$(182) 2(x - 7)$$

$$(183) 3(2 - x)$$

$$(184) 4(2x - 3)$$

$$(185) -2(3x - 5)$$

$$(186) 3(2x - 3y + 7)$$

$$(187) -2(3x - 2y - 8)$$

$$(188) 2x(x^2 + 2x - 7)$$

$$(189) 3x(2x^2 - 6x + 5)$$

$$(190) (x + 2)(x + 6)$$

$$(191) (x - 2)(x - 6)$$

$$(192) (x + 2)(x - 6)$$

$$(193) (x - 2)(x + 6)$$

10.

194 $(2x+3)(3x+5)$

195 $(2x-3)(3x-5)$

196 $(2x+3)(3x-5)$

197 $(2x-3)(3x+5)$

198 $(x+3)(x-3)$

199 $(x-3)(x-3)$

200 $(x-5)(x+5)$

201 $(x-5)(x-5)$

202 $(2x+3)(2x-3)$

203 $(2x-3)(2x-3)$

204 $(x-3)^2$

205 $(2x-3)^2$

206 $(2x-3)^2$

207 $(x+2)(x^2+3x+3)$

208 $(x-2)(x^2-3x-7)$

209 $(2x+3)(x^2+2x+5)$

210 $(2x-3)(x^2+3x+7)$

211 $(2x+3)(2x^2+6x+5)$

212 $(2x-3)(2x^2-3x+2)$

213 $(2a+3b)(2a+5b+7)$

214 $(2a-3b)(3a-5b-2)$

215 $(2a+3b-2)(a+2b)$

216 $(2a+5b-5)(2a+3b)$

217 $2x^3(3x^4+4x)$

218 $2x^2(1-5x^2)$

219 $-2x^3(3-5x^4)$

220 $x^4 \cdot x^3 \cdot x$

221 $(x^3)^3$

222 $(x^5)^{-5}$

223 $(-3x)^2$

224 $(-2x)^3$

225 $(2xy^5)(-3x^2y^7)$

226 $(-2x^3y^5)(-2xy)$

13

$$227 \quad -2x^3y^4 \cdot 3x \cdot 5y^3$$

$$228 \quad -2xy \cdot 5y^3 \cdot 3x^2$$

$$229 \quad \frac{x^4y^5}{xy^9}$$

$$230 \quad \frac{20x^5y^7}{15xy}$$

$$231 \quad \frac{-25x^3y^7}{-40xy^{10}}$$

$$232 \quad (-5xy^5)^2$$

$$233 \quad (-2x^3y)^3$$

$$234 \quad \left(\frac{-5xy^4}{2z^5} \right)^2$$

$$235 \quad \left(\frac{-2x^3y}{3z^3} \right)^3$$

236 $2x - 4$ factor

237 $4x^2 - 2x$ factor

238 $x^2 + 4x + 3$ factor

239 $x^2 - 7x + 10$ factor

240 $x^2 - x - 6$ factor

241 $x^2 - 3x - 40$ factor

242 $x^2 - 10x + 16$ factor

243 $6x^2 + 19x + 15$ factor

244 $10x^2 + 9x + 2$ factor

245 $10x^2 - 23x - 5$ factor

246 $x^2 - 16$ factor

247 $4x^2 - 9$ factor

248 $25x^2 - 49$ factor

249 $4x^2 - 9y^2$ factor

250 $144x^2 - 49y^2$ factor

251 $3x^3 - 48x$ factor

252 $2x^3 + 8x^2 + 6x$ factor

253 $2x(x-2) = 0$ Solve

254 $-2x(x+3) = 0$

255 $2x(5-x) = 0$

256 $-5x(6-x) = 0$

257 $(x+1)(x+3) = 0$

258 $(x-2)(x-5) = 0$

259 $(x-3)(x+2) = 0$

260 $(x+5)(x-8) = 0$

261 $(2x+1)(3x+5) = 0$

262 $(2x+3)(7-x) = 0$

263 $x^2 + 7x + 12 = 0$

264 $x^2 + 8x + 12 = 0$

265 $x^2 + 14x + 24 = 0$

266 $x^2 + 11x + 24 = 0$

267 $x^2 + 10x + 24 = 0$

268 $x^2 - 11x + 28 = 0$

269 $x^2 - 10x + 16 = 0$

270 $x^2 - 11x - 12 = 0$

(16)

$$271 \quad x^2 + 7x = -12$$

$$272 \quad x^2 + 12 = -8x$$

$$273 \quad x^2 = -14x - 24$$

$$274 \quad x(x+11) = -24$$

$$275 \quad x^2 + 10x + 26 = 2$$

$$276 \quad 4x^2 - 11x + 30 = 3x^2 + 2$$

$$277 \quad 6x^2 + 19x + 15 = 0$$

$$278 \quad 6x^2 + 13x + 6 = 0$$

$$279 \quad 10x^2 + 9x + 2 = 0$$

$$280 \quad 6x^2 - 11x + 5 = 0$$

$$281 \quad 10x^2 - 23x - 5 = 0$$

$$282 \quad x^2 + 2x + 10 = 0 \quad \text{use Quadratic formula}$$

$$283 \quad x^2 + 2x + 26 = 0 \quad \text{use Quadratic formula}$$

$$284 \quad x^2 + 2x - 4 = 0 \quad \text{use Quadratic formula}$$

$$285 \quad x^2 + 14x + 24 = 0 \quad \text{use Quadratic formula}$$

286 $y = 2x - 7$ find slope at y-intercept

287 $y = \frac{3}{2}x + 1$ find slope at y-intercept

288 $4x + 2y = 8$ find slope at y-intercept

289 $2x + 4y = 12$ find slope at y-intercept

290 $(2, 4)$ $(-5, -10)$ find slope

291 $(-4, -2)$ $(-10, -5)$ find slope

292 $m = 4$, point = $(1, 12)$ find equation of the line

293 $m = 50$ point = $(10, 900)$ find equation of the line

294 $m = -2$ point = $(2, 20)$ find equation of the line

295 $m = -\frac{1}{2}$ point = $(-4, -60)$ find the equation of the line

296 $y = -2x + 4$ graph $\leftarrow \begin{array}{c|c} x & y \\ \hline 0 & 4 \\ \hline \end{array}$

297 $y = 2x - 6$ graph $\leftarrow \begin{array}{c|c} x & y \\ \hline 0 & -6 \\ \hline \end{array}$

298 $y = \frac{1}{2}x - 1$ graph $\leftarrow \begin{array}{c|c} x & y \\ \hline 0 & -1 \\ \hline \end{array}$

299 $y = \frac{3}{2}x - 1$ graph $\begin{array}{c|c} x & y \\ \hline 0 & -1 \\ \hline \end{array}$

300 $y = 6$ graph $\leftarrow \begin{array}{c|c} x & y \\ \hline 0 & 6 \\ \hline \end{array}$

301 $y = -8$ graph $\leftarrow \begin{array}{c|c} x & y \\ \hline 0 & -8 \\ \hline \end{array}$

302 $4x + 2y = 8$ graph find slope-intercept form first

303 $4x - 2y = 16$ graph find slope-intercept form first

304 $3x + 2y = 6$ graph find x and y-intercepts first

305 $2x - 5y = 10$ graph find x and y-intercepts first

306 $y = |x - 2|$ graph $\begin{array}{c|c} x & y \\ \hline 1 & \\ \hline 2 & \\ \hline 3 & \\ \hline \end{array}$

307 $y = x^2 - 4$ graph $\begin{array}{c|c} x & y \\ \hline -1 & \\ \hline 0 & \\ \hline 1 & \\ \hline \end{array}$

18.

$$\textcircled{308} \quad \sqrt{x+1} = 3$$

$$\textcircled{309} \quad \sqrt{x-1} = 7$$

$$\textcircled{310} \quad \sqrt{x} + 1 = 6$$

$$\textcircled{311} \quad \sqrt{x} - 1 = 4$$

$$\textcircled{312} \quad \sqrt{2x+1} = 9$$

$$\textcircled{313} \quad \sqrt{3x+1} = \sqrt{x+9}$$

$$\textcircled{314} \quad x^2 = 16$$

$$\textcircled{315} \quad (x+1)^2 = 16$$

$$\textcircled{316} \quad (x-1)^2 = 16$$

19.

$$\begin{aligned} 317 \quad u + p &= 55 \\ u - p &= 45 \end{aligned}$$

20

$$\begin{aligned} 318 \quad 2u + 2p &= 110 \\ 2u + 3p &= 115 \end{aligned}$$

$$\begin{aligned} 319 \quad x + y &= 3 \\ x - y &= 1 \end{aligned}$$

$$\begin{aligned} 320 \quad 5x + 2y &= 7 \\ 6x + 3y &= 9 \end{aligned}$$

$$\begin{aligned} 321 \quad x + y &= 3 \\ y &= 2x \end{aligned}$$

$$\begin{aligned} 322 \quad x + y &= 4 \\ y &= 2x + 1 \end{aligned}$$

323 $2x < 8$

324 $-2x < 8$

325 $-2x < -10$

326 $2x < -12$

327 $2x + 1 < 11$

328 $-2x + 1 < -11$

329 $-2x - 2 \leq 14$

330 $-3x - 6 \leq 12$

331 $2x - 1 \leq -7$

332 $-2x - 2 \leq -12$

333 $2x + 1 < 4x + 7$

334 $4x + 2 < 2x + 22$

335 $4x + 2 \leq 6x + 20$

336 $3x + 2 \leq x + 42$

337 $|2x| = 4$

338 $|x+1| = 4$

339 $|2x+4| = 8$

340 $|x+1| < 3$

341 $|2x+4| \leq 12$

342 $|x+2| > 8$

343 $|2x+4| \geq 16$

344 $|x+2| - 3 \geq 5$

345 $\frac{x}{6} + 1 < \frac{x}{2} - 1$

346 $\frac{5x}{6} + 5 \leq \frac{5x}{2} - 5$

347 $2.75x + 10 \leq 2.80x - 210$

Aleksall 347
06-148
06-2812

1. $-2(-3) =$

$6 =$

mlh0410 347 Aleksstep

2. $2(4) =$

$8 =$

3. $-2(4) =$

$-8 =$

4. $4(-6) =$

$-24 =$

5. $\frac{-10}{-2} =$

$5 =$

6. $\frac{10}{5} =$

$2 =$

7

$$\frac{-10}{5} =$$

$$-2 =$$

8

$$\frac{8}{-2} =$$

$$-4 =$$

9

$$4 - 9 =$$

$$-5 =$$

10

$$-4 - 9 =$$

$$-13 =$$

11

$$-4 + 9 =$$

$$5 =$$

12

$$-4 + 4 =$$

$$0 =$$

$$13 \quad -4 - 4 =$$

$$-8 =$$

$$14 \quad -2 + (-7) =$$

$$-2 - 7 =$$

$$-9 =$$

$$15 \quad -2 - (-7) =$$

$$-2 + 7 =$$

$$5 =$$

$$16 \quad 4 - (-4) =$$

$$4 + 4 =$$

$$8 =$$

$$17 \quad 4 + (-4) =$$

$$4 - 4 =$$

$$0 =$$

$$18 \quad -6 - (-3) =$$

$$-6 + 3 =$$

$$-3$$

19

$$\frac{0}{5} =$$

$$0 =$$

20

$$\frac{5}{0} =$$

undefined

21

$$(-2)^2 =$$

$$(-2)(-2) =$$

$$(4) =$$

$$4 =$$

22

$$(-2)^3 =$$

$$(-2)(-2)(-2) =$$

$$(4)(-2) =$$

$$(-8) =$$

$$-8 =$$

$$23) -3^2 =$$

$$-(3)(3) =$$

$$-(9) =$$

$$-9 =$$

$$24) -5^4 =$$

$$-(5)(5)(5)(5) =$$

$$-(25)(5)(5) =$$

$$-(125)(5) =$$

$$-(625) =$$

$$-625 =$$

$$25)$$

$$|-4|^2$$

$$(4) =$$

$$4 =$$

26

$$|5| =$$

$$(5) =$$

$$5 =$$

27

$$|0| =$$

$$(0) =$$

$$0 =$$

28

$$-|3| =$$

$$-(3) =$$

$$-3 =$$

29

$$-|-5| =$$

$$-(5) =$$

$$-5 =$$

$$\textcircled{30} \quad |-3-7| =$$

$$|-10| =$$

$$(10) =$$

$$10 =$$

$$\textcircled{31} \quad |-5+1| =$$

$$|-4| =$$

$$(4) =$$

$$4 =$$

$$\textcircled{32} \quad |-5+9| =$$

$$|4| =$$

$$(4) =$$

$$4 =$$

$$\textcircled{33} \quad \sqrt{4} =$$

$$2 =$$

$$\textcircled{34} \quad \sqrt{81} =$$

$$9 =$$

35 $\sqrt{100} =$

10 =

36 $\sqrt[3]{8} =$

2 =

37 $\sqrt[3]{27} =$

3 =

38 $\sqrt[3]{64} =$

4 =

39 $\sqrt[3]{1000} =$

10 =

40 $\sqrt{20}$ Primes 2, 3, 5, 7...

$\sqrt{4 \cdot 5} =$

$\sqrt{4} \sqrt{5} =$

2 $\sqrt{5} =$

2	20
2	10
5	5
	1

41) $\sqrt{50} =$

Primes 2, 3, 5, 7...

$\sqrt{25 \cdot 2} =$

$\sqrt{25} \sqrt{2} =$

$5\sqrt{2} =$

$$\begin{array}{r}
 2 \overline{) 50} \\
 \underline{40} \\
 10 \\
 \underline{10} \\
 0 \\
 1
 \end{array}$$

42) $\sqrt[3]{16} =$

Primes 2, 3, 5, 7...

$\sqrt[3]{8 \cdot 2} =$

$\sqrt[3]{8} \sqrt[3]{2} =$

$2\sqrt[3]{2} =$

$$\begin{array}{r}
 2 \overline{) 16} \\
 \underline{14} \\
 2 \\
 \underline{2} \\
 0 \\
 1
 \end{array}$$

43) $\sqrt[3]{24} =$

Primes 2, 3, 5, 7...

$\sqrt[3]{8 \cdot 3} =$

$\sqrt[3]{8} \sqrt[3]{3} =$

$2\sqrt[3]{3} =$

$$\begin{array}{r}
 2 \overline{) 24} \\
 \underline{16} \\
 8 \\
 \underline{6} \\
 2 \\
 \underline{2} \\
 0 \\
 1
 \end{array}$$

44 $\sqrt{-9} =$

$3i =$

45 $\sqrt{-25} =$

$5i$

46 $\sqrt{100} =$

$10i$

47 $\sqrt{-20} =$

Primes 2, 3, 5, 7...

$\sqrt{-4 \cdot 5} =$

$\sqrt{-4} \sqrt{5} =$

$2i \sqrt{5} =$

Formula
 $\sqrt{-1} = i$
 $\sqrt{-4} = 2i$
 $\sqrt{-16} = 4i$
...

$\begin{array}{r} 2 \overline{) 20} \\ \underline{20} \\ 0 \end{array}$
 $\begin{array}{r} 2 \overline{) 10} \\ \underline{10} \\ 0 \end{array}$
 $\begin{array}{r} 5 \overline{) 5} \\ \underline{5} \\ 0 \end{array}$

Formula
 $\sqrt{-1} = i$

48 - $\sqrt{-50} =$ Primes 2, 3, 5, 7, ...

- $\sqrt{-25 \cdot 2} =$

- $\sqrt{-25} \sqrt{2} =$

- $(5i) \sqrt{2} =$

- $5i \sqrt{2} =$

$$\begin{array}{r} 2 \overline{)50} \\ \underline{40} \\ 10 \\ \underline{10} \\ 0 \end{array}$$

Formula $\sqrt{-1} = i$

49 $\sqrt{\frac{1}{4}} =$

$\frac{\sqrt{1}}{\sqrt{4}} =$

$\frac{1}{2} =$

50 $\sqrt{\frac{4}{9}} =$

$\frac{\sqrt{4}}{\sqrt{9}} =$

$\frac{2}{3} =$

$$(51) \sqrt[3]{\frac{8}{27}}$$

$$\frac{\sqrt[3]{8}}{\sqrt[3]{27}} =$$

$$\frac{2}{3} =$$

$$(52) 125^{\frac{2}{3}} \quad \text{Prima } 2, 3, 5, 7, \dots$$

$$(5^3)^{\frac{2}{3}} =$$

$$(5^{\frac{3}{1}})^{\frac{2}{3}} =$$

$$5^{\frac{3}{1}(\frac{2}{3})} =$$

$$5^{\frac{6}{3}} =$$

$$5^2 =$$

$$(5)(5) =$$

$$25 =$$

$$\begin{array}{r} 5 \overline{) 125} \\ 5 \overline{) 25} \\ 5 \overline{) 5} \\ 1 \end{array}$$

53 $25^{3/2}$: Prime 2, 3, 5, 7...

$$(5^2)^{3/2} =$$

$$\begin{array}{r} \sqrt{25} \\ \sqrt{5} \\ | \end{array}$$

$$(5^{2/7})^{3/2} =$$

$$5^{2/7 \cdot (3/2)} =$$

$$5^{6/7} =$$

$$5^3 =$$

$$(5)(5)(5) =$$

$$(25)(5) =$$

$$\boxed{125 =}$$

54.

$$\left(\frac{1}{125}\right)^{-2/3} =$$

Prime 2, 3, 5, 7, ...

$$\left(\frac{1}{5^3}\right)^{-2/3} =$$

$$\begin{array}{r}
 5 \overline{) 125} \\
 \underline{5 25} \\
 5 5 \\
 \underline{5 5} \\
 1
 \end{array}$$

$$\left(5^{-3}\right)^{-2/3} = \text{rewrite}$$

$$\left(5^{-3/1}\right)^{-2/3} =$$

$$5^{\left(\frac{-3}{1}\right)\left(\frac{-2}{3}\right)} =$$

$$5^{2/1} =$$

$$5^2 =$$

$$(5)(5) =$$

$$25 =$$

$$55. \left(\frac{3}{4}\right)^{-2}$$

$$\left(\frac{3^1}{4^1}\right)^{-2} =$$

$$\frac{3^{(1)(-2)}}{4^{(1)(-2)}} =$$

$$\frac{3^{-2}}{4^{-2}} =$$

$$\frac{4^2}{3^2} = \text{rewrite}$$

$$\frac{(4)(4)}{(3)(3)} =$$

$$\frac{16}{9} =$$

$$(56) \quad 5 + 18 + 9 \div 3 =$$

PEMDAS

$$5 + 18 + 3 =$$

$$23 + 3 =$$

$$26 =$$

$$(57) \quad 2 \cdot 5 - 16 \div 4 + 1 =$$

PEMDAS

$$10 - 16 \div 4 + 1 =$$

$$10 - 4 + 1 =$$

$$6 + 1 =$$

$$7 =$$

$$(58) \quad [(10 + 4) \div 7 - 3] \cdot 2 =$$

PEMDAS

$$[(14) \div 7 - 3] \cdot 2 =$$

$$[2 - 3] \cdot 2 =$$

$$[-1] \cdot 2 =$$

$$-2 =$$

59

$$10 + 6^2 \div 3 =$$

PEMDAS

$$10 + (6)(6) \div 3 =$$

$$10 + 36 \div 3 =$$

$$10 + 12 =$$

$$22 =$$

60

$$2 + 3^2 \cdot 5 =$$

PEMDAS

$$2 + (3)(3) \cdot 5 =$$

$$2 + 9 \cdot 5 =$$

$$2 + 45 =$$

$$47 =$$

61

$$2 + 3 \cdot 4 - 12 \div 3 =$$

PEMDAS

$$2 + 12 - 12 \div 3 =$$

$$2 + 12 - 4 =$$

$$14 - 4 =$$

$$10 =$$

$$62 \quad 2 \left[(12+6) \div 6 - 3 \right] = \text{PEMDAS}$$

$$2 \left[(18) \div 6 - 3 \right] =$$

$$2 \left[3 - 3 \right] =$$

$$2 \left[0 \right] =$$

$$0 =$$

$$63 \quad 10 + 6^2 \div 4 = \text{PEMDAS}$$

$$10 + (6)(6) \div 4 =$$

$$10 + (36) \div 4 =$$

$$10 + 9 =$$

$$19 =$$

$$64 \quad 10 \div 2 + 3 + 3 \cdot 5 = \text{PEMDAS}$$

$$5 + 3 + 3 \cdot 5 =$$

$$5 + 3 + 15 =$$

$$8 + 15 =$$

$$23 =$$

65 $2[(6+4) \div 2 - 3] =$ PEMDAS

$$2[(10) \div 2 - 3] =$$

$$2[5 - 3] =$$

$$2[2] =$$

$$4 =$$

66

$$3 + 16 \div 2^3 =$$

PEMDAS

$$3 + 16 \div (2 \cdot 2 \cdot 2) =$$

$$3 + 16 \div (8) =$$

$$3 + 2 =$$

$$5 =$$

67

$$4 \cdot 5 - 10 \div 2 + 1 =$$

PEMDAS

$$20 - 10 \div 2 + 1 =$$

$$20 - 5 + 1 =$$

$$15 + 1 =$$

$$16 =$$

68

$$10 + 15 \div 3 + 2 \cdot 5 =$$

$$10 + 5 + 2 \cdot 5 =$$

$$10 + 5 + 10 =$$

$$15 + 10 =$$

$$25 =$$

PEMDAS

69

$$10 \div [(15 - 13) \cdot 8 - 11] =$$

PEMDAS

$$10 \div [(2) \cdot 8 - 11] =$$

$$10 \div [16 - 11] =$$

$$10 \div [5] =$$

$$2 =$$

70

$$[(21 + 9) \cdot 2] \div 3 =$$

PEMDAS

$$[(30) \cdot 2] \div 3 =$$

$$[60] \div 3 =$$

$$20 =$$

71

$$2 + 2 \cdot 5 - 50 \div 5 =$$

$$2 + 10 - 50 \div 5 =$$

$$2 + 10 - 10 =$$

$$12 - 10 =$$

$$2 =$$

PEMDAS

72

$$2 + 2 \cdot 3^2 =$$

$$2 + 2 (3 \cdot 3) =$$

$$2 + 2 (9) =$$

$$2 + 18 =$$

$$20 =$$

PEMDAS

73

$$4 + 6^2 \div 3 =$$

$$4 + (6 \cdot 6) \div 3 =$$

$$4 + 36 \div 3 =$$

$$4 + 12 =$$

$$16 =$$

PEMDAS

74 $2[2 + (8+10) \div 2] =$ pentas

$$2[2 + (18) \div 2] =$$

$$2[2 + 9] =$$

$$2[11] =$$

$$22 =$$

75 $A = \pi r^2$ $r = 5$

area of a circle

$$A = \pi (5)^2$$

$$A = \pi (5)(5)$$

$$A = \pi (25)$$

$$A = 25\pi$$



76 $A = \pi r^2$, $\pi = 3.14$, $r = 6$

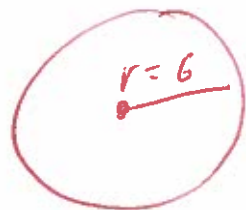
$$A = 3.14(6)^2$$

$$A = 3.14(6)(6)$$

$$A = 3.14(36)$$

$$A = 113.04$$

area of a circle



$$(77) C = \pi D, \quad D = 10$$

$$C = \pi(10)$$

$$C = 10\pi$$

$$(78) C = \pi D, \quad \pi = 3.14, \quad D = 8$$

$$C = 3.14(8)$$

$$C = 25.12$$

$$\begin{array}{r} \overset{1}{3} \overset{3}{.14} \\ \times \quad 8 \\ \hline 25.12 \end{array}$$

$$(79) C = 2\pi r, \quad r = 3$$

$$C = 2\pi(3)$$

$$C = 6\pi$$

$$(80) C = 2\pi r, \quad \pi = 3.14, \quad r = 8$$

$$C = 2(3.14)(8)$$

$$C = 2(25.12)$$

$$C = 50.24$$

$$\textcircled{81} \quad A = LW, \quad L = 10, \quad W = 8$$

$$A = (10)(8)$$

$$A = 80$$

$$\textcircled{82} \quad A = \frac{1}{2}BH, \quad B = 10, \quad H = 4$$

$$A = \frac{1}{2}(10)(4)$$

$$A = \frac{1}{2}(40)$$

$$A = \frac{1}{2}\left(\frac{40}{1}\right)$$

$$A = \frac{40}{2}$$

$$A = 20$$

$$\textcircled{83} \quad P = 2L + 2W, \quad L = 12, \quad W = 4$$

$$P = 2(12) + 2(4)$$

$$P = 24 + 8$$

$$P = 32$$

$$84) -b + 8c, \quad b = 4, \quad c = -4$$

$$-(4) + 8(-4) =$$

$$-4 - 32 =$$

$$-36 =$$

85)

$$P = s_1 + s_2 + s_3,$$

$$P = (3) + (4) + (6)$$

$$P = 3 + 4 + 6$$

$$P = 7 + 6$$

$$P = 13$$

$$s_1 = 3, \quad s_2 = 4, \quad s_3 = 6$$

86)

$$x^2 + 7x - 6,$$

$$x = -10$$

$$(-10)^2 + 7(-10) - 6 =$$

$$(-10)(-10) + 7(-10) - 6 =$$

$$(100) + 7(-10) - 6 =$$

$$100 - 70 - 6 =$$

$$30 - 6 =$$

$$24 =$$

$$87 \quad -2x^2 - 3x + 1, \quad x = -4$$

$$\begin{aligned} & -2(-4)^2 - 3(-4) + 1 = \\ & -2(-4)(-4) - 3(-4) + 1 = \\ & -2(16) - 3(-4) + 1 = \\ & -32 + 12 + 1 = \\ & -20 + 1 = \\ & -19 = \end{aligned}$$

$$88. \quad 2(x-3)^2 + 4, \quad x = 1$$

$$\begin{aligned} & 2(1-3)^2 + 4 = \\ & 2(-2)^2 + 4 = \\ & 2(-2)(-2) + 4 = \\ & 2(4) + 4 = \\ & 8 + 4 = \end{aligned}$$

$$12 =$$

$$\textcircled{89} \quad \sqrt{2x+1} \quad , \quad x=40$$

$$\sqrt{2(40)+1} =$$

$$\sqrt{80+1} =$$

$$\sqrt{81} =$$

$$9 =$$

$$\textcircled{90} \quad |2x-9| \quad , \quad x=2$$

$$|2(2)-9| =$$

$$|4-9| =$$

$$|-5| =$$

$$(5) =$$

$$5 =$$

$$\textcircled{91} \quad \frac{2x-8}{3x+2}, \quad x = -2$$

$$\frac{2(-2)-8}{3(-2)+2} =$$

$$\frac{-4-8}{-6+2} =$$

$$\frac{-12}{-4} =$$

$$3 =$$

$$\textcircled{92} \quad A = P - PD, \quad P = \$50,000, \quad D = 95\% = .95$$

$$A = \$50,000 - \$50,000(.95)$$

$$A = \$50,000 - \$47,500$$

$$A = \$2,500$$

discount

93 $A = P + PRT$ $P = \$50,000$ $R = 8\%$
 $= .08$

$A = \$50,000 + \$50,000(.08)(10)$ $T = 10$

$A = \$50,000 + \$50,000(.80)$

$A = \$50,000 + \$40,000$

$A = \$90,000$

Interest

94. $(x-3)(x-4)$, $x=2$

$(2-3)(2-4) =$

$(-1)(-2) =$

$2 =$

95. $(x-4)(x+5)$, $x=4$

$(4-4)(4+5) =$

$(0)(9) =$

$0 =$

$$(96) (x-2)(x-7) \quad , x=7$$

$$(7-2)(7-7) =$$

$$(5)(0) =$$

$$0 =$$

$$(97) (x-1)(x-3) \quad , x=-2$$

$$(-2-1)(-2-3) =$$

$$(-3)(-5) =$$

$$15 =$$

$$(98) (x-3)(x-5) \quad , x=-3$$

$$(-3-3)(-3-5) =$$

$$(-6)(-8) =$$

$$48 =$$

99 $2x(x-3)$, $x=0$

$$2(0)(0-3) =$$

$$0(-3) =$$

$$0 =$$

100 $2x(x+5)$, $x=-5$

$$2(-5)(-5+5) =$$

$$-10(0) =$$

$$0 =$$

101 $2x(x-3)$, $x=-2$

$$2(-2)(-2-3) =$$

$$-4(-5) =$$

$$20 =$$

$$(102) -2x(x-5), \quad x=0$$

$$-2(0)(0-5) =$$

$$0(-5) =$$

$$0 =$$

$$(103) x^2 - 16, \quad x = -4$$

$$(-4)^2 - 16 =$$

$$(-4)(-4) - 16 =$$

$$(16) - 16 =$$

$$16 - 16 =$$

$$0 =$$

$$(104) x^2 - 9, \quad x = 3$$

$$(3)^2 - 9 =$$

$$(3)(3) - 9 =$$

$$(9) - 9 =$$

$$9 - 9 =$$

$$0 =$$

$$105 \quad 2(x-7)^2 + 9, \quad x=7$$

$$2(7-7)^2 + 9 =$$

$$2(0)^2 + 9 =$$

$$2(0)(0) + 9 =$$

$$2(0) + 9 =$$

$$0 + 9 =$$

$$9 =$$

$$106 \quad 3(x+4)^2 - 9, \quad x=-4$$

$$3(-4+4)^2 - 9 =$$

$$3(0)^2 - 9 =$$

$$3(0)(0) - 9 =$$

$$3(0) - 9 =$$

$$0 - 9 =$$

$$-9 =$$

107 $2(x+1)^2 - 3$, $x=2$

$$2(2+1)^2 - 3 =$$

$$2(3)^2 - 3 =$$

$$2(3)(3) - 3 =$$

$$2(9) - 3 =$$

$$18 - 3 =$$

$$15 =$$

108 $\frac{29}{4}$ Write as a mixed number

$$\begin{array}{r} 7 \frac{1}{4} \\ 4 \overline{) 29} \\ \underline{-(28)} \\ 1 \text{ rem} \end{array}$$

$$7 \frac{1}{4} =$$

109 $4 \frac{2}{7}$ Write as improper fraction

↓

$$\frac{7(4) + 2}{7} =$$

$$\frac{28 + 2}{7} =$$

$$\frac{30}{7} =$$

110 $\frac{85}{100}$ simplify

$$\frac{\cancel{5}(17)}{\cancel{2}(\cancel{2})(\cancel{5})(\cancel{2})} =$$

$$\frac{17}{40} =$$

$$\frac{17}{40} =$$

Prime 2, 3, 5, 7, 11, 13, 17

$$\begin{array}{r} 5 \overline{) 85} \\ 17 \overline{) 17} \\ 1 \end{array} \quad \begin{array}{r} \cancel{2} \overline{) 100} \\ 2 \overline{) 50} \\ 5 \overline{) 25} \\ 5 \overline{) 5} \\ 1 \end{array}$$

111 29.43% write as a decimal

$$.2943 =$$

move decimal left
two times

112 .297 write as a percent

$$29.7\% =$$

move decimal
two times right

113 2479.31 write in Scientific Notation

$$2.47931 \times 10^3 =$$

114 .0007512 write in Scientific Notation

$$7.512 \times 10^{-4} =$$

115 $2479.35 \div 1000$

$24.7935 =$ move decimal two times left

116 457.9351×1000

$457935.1 =$ move decimal three times right

117 48 and 32 find GCF

Primes 2, 3, 5, 7, ...

GCF = $2 \cdot 2 \cdot 2 \cdot 2$

$= 32$

$2 \overline{) 48}$

$2 \overline{) 24}$

$2 \overline{) 12}$

$2 \overline{) 6}$

$3 \overline{) 3}$

$2 \overline{) 32}$

$2 \overline{) 16}$

$2 \overline{) 8}$

$2 \overline{) 4}$

$2 \overline{) 2}$

$48 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 3$

$32 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

GCF = $2 \cdot 2 \cdot 2 \cdot 2$

$= 32$

118 $\frac{3}{20}$ write as a percent

$\frac{3}{20} = \frac{x}{100}$

$3(100) = 20(x)$

$300 = 20x$

$\frac{300}{20} = \frac{20x}{20}$

$15 = x$

$15\% =$

(119) 28% write as fraction simplified
Prima 2, 3, 5, 7, ...

$$\frac{28}{100} =$$

$$\frac{(2)(2)(7)}{(2)(2)(5)(5)} =$$

$$\frac{7}{25} =$$

$$\begin{array}{r} 2 \overline{) 28} \\ 2 \overline{) 14} \\ 7 \overline{) 7} \\ 1 \end{array}$$

$$\begin{array}{r} 2 \overline{) 100} \\ 2 \overline{) 50} \\ 5 \overline{) 25} \\ 5 \overline{) 5} \\ 1 \end{array}$$

(120) $\frac{7}{10} + \frac{1}{4}$ Prima 2, 3, 5, 7, ...

$$\frac{7}{10} \left(\frac{2}{2} \right) + \frac{1}{4} \left(\frac{5}{5} \right) =$$

$$\frac{14}{20} + \frac{5}{20} =$$

$$\frac{14+5}{20} =$$

$$\frac{19}{20} =$$

$$\begin{array}{r} 2 \overline{) 10} \\ 5 \overline{) 5} \\ 1 \end{array}$$

$$\begin{array}{r} 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$$

$$10 = 2 \cdot 5$$

$$4 = 2 \cdot 2$$

$$\begin{array}{r} \hline \text{LCD} = 2 \cdot 2 \cdot 5 \\ = 20 \end{array}$$

(121) $\frac{4}{5} \cdot \frac{10}{8}$ Primi 2, 3, 5, 7, ...

$$\frac{(2)(2)}{(5)} \cdot \frac{(2)(5)}{(2)(2)(2)} =$$

$$\begin{array}{r} 2 \cancel{4} \\ \hline 2 \cancel{2} \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \cancel{10} \\ \hline 5 \cancel{5} \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \cancel{8} \\ \hline 2 \cancel{4} \\ \hline 2 \cancel{2} \\ \hline 1 \end{array}$$

$$\frac{(2)(2)}{(5)} \cdot \frac{(2)(5)}{(2)(2)(2)} =$$

$$\frac{1}{1} =$$

$$1 =$$

(122) $\frac{3}{7} \cdot \frac{2}{5} =$

$$\frac{6}{35} =$$

(123) $\frac{3}{10} \div \frac{6}{5} =$ Primi 2, 3, 5, 7, ...

$$\frac{3}{10} \cdot \frac{5}{6} =$$

$$\begin{array}{r} 2 \cancel{10} \\ \hline 5 \cancel{5} \\ \hline 1 \end{array} \quad \begin{array}{r} 2 \cancel{6} \\ \hline 3 \cancel{3} \\ \hline 1 \end{array}$$

$$\frac{1(3)}{(2)(5)} \cdot \frac{(5)}{(2)(3)} =$$

$$\frac{1}{4} =$$

124

$$\frac{2}{-5} \div \frac{3}{10}$$

$$-\frac{2}{5} \cdot \frac{10}{3} =$$

$$-\frac{2}{\cancel{5}} \cdot \frac{(2)\cancel{10}}{(3)} =$$

$$\frac{-4}{3} =$$

Primes 2, 3, 5, 7, ...

$$\begin{array}{r} 2 \cancel{10} \\ 5 \cancel{5} \\ 1 \end{array}$$

125

$$\frac{5}{-12} - \frac{1}{9} =$$

$$-\frac{5}{12} - \frac{1}{9} =$$

$$-\frac{5}{12} \left(\frac{3}{3}\right) - \frac{1}{9} \left(\frac{4}{4}\right) =$$

$$\frac{-15}{36} - \frac{4}{36} =$$

$$\frac{-15-4}{36} =$$

$$\frac{-19}{36} =$$

Primes 2, 3, 5, 7, ...

$$\begin{array}{r} 2 \cancel{12} \\ 2 \cancel{6} \\ 3 \cancel{3} \\ 1 \end{array}$$

$$\begin{array}{r} 3 \cancel{9} \\ 3 \cancel{3} \\ 1 \end{array}$$

$$\begin{array}{l} 12 = 2 \cdot 2 \cdot 3 \\ 9 = 3 \cdot 3 \\ \hline \text{LCD} = 2 \cdot 2 \cdot 3 \cdot 3 \\ = 36 \end{array}$$

$$(126) \quad \frac{1}{6} - \frac{1}{4} =$$

$$\frac{1}{6} \left(\frac{2}{2} \right) - \frac{1}{4} \left(\frac{3}{3} \right) =$$

$$\frac{2}{12} - \frac{3}{12} =$$

$$\frac{2-3}{12} =$$

$$\frac{-1}{12} =$$

Prime 2, 3, 5, 7 ...

$$\begin{array}{r} 2 \overline{)6} \\ 3 \overline{)3} \\ 1 \end{array}$$

$$\begin{array}{r} 2 \overline{)4} \\ 2 \overline{)2} \\ 1 \end{array}$$

$$6 = 2 \cdot 3$$

$$4 = 2 \cdot 2$$

$$\text{LCD} = 2 \cdot 2 \cdot 3 = 12$$

(127)

$$\frac{\frac{5}{6}}{\frac{8}{9}} =$$

Prime 2, 3, 5, 7 ...

$$\begin{array}{r} 2 \overline{)6} \\ 3 \overline{)3} \\ 1 \end{array}$$

$$\begin{array}{r} 2 \overline{)8} \\ 2 \overline{)4} \\ 2 \overline{)2} \\ 1 \end{array} \quad \begin{array}{r} 3 \overline{)9} \\ 3 \overline{)3} \\ 1 \end{array}$$

$$\frac{5}{6} \cdot \frac{9}{8} =$$

$$\frac{(5)}{(2)(3)} \cdot \frac{(3)(3)}{(2)(2)(2)} =$$

$$\frac{(5)}{(2)(\cancel{3})} \cdot \frac{(\cancel{3})(3)}{(2)(2)(2)} =$$

$$\frac{15}{16} =$$

128 $\frac{1}{16} - \frac{1}{2} \cdot \frac{1}{2} =$

$\frac{1}{16} - \frac{1}{4} =$

$\frac{1}{16} - \frac{1}{4} \left(\frac{4}{4}\right) =$

$\frac{1}{16} - \frac{4}{16} =$

$\frac{1-4}{16} =$

$\frac{-3}{16} =$

Prime 2, 3, 5, 7.

$2 \overline{) 16} \quad 2 \overline{) 4}$

$2 \overline{) 8} \quad 2 \overline{) 2}$

$2 \overline{) 4} \quad 1$

$2 \overline{) 2}$

1

$16 = 2 \cdot 2 \cdot 2 \cdot 2$

$4 = 2 \cdot 2$

$LCD = 2 \cdot 2 \cdot 2 \cdot 2 = 16$

129 $\frac{3}{20} - \frac{2}{3} \div \frac{8}{3} =$

$\frac{3}{20} - \frac{2}{3} \cdot \frac{3}{8} =$

$\frac{3}{20} - \frac{2}{\cancel{3}} \cdot \frac{\cancel{3}}{8} =$

$\frac{3}{20} - \frac{1}{4} =$

$\frac{3}{20} - \frac{1}{4} \left(\frac{5}{5}\right) =$

$\frac{3}{20} - \frac{5}{20} = \frac{-1(2)}{(2)(2)(5)} =$

$\frac{3-5}{20} = \frac{-2}{20} = \frac{-1}{10} =$

Prime 2, 3, 5, 7, ...

$2 \overline{) 8}$
 $2 \overline{) 4}$
 $2 \overline{) 2}$
 1

Prime 2, 3, 5, 7

$2 \overline{) 20} \quad 2 \overline{) 4}$

$2 \overline{) 10} \quad 2 \overline{) 2}$

$5 \overline{) 5} \quad 1$

$20 = 2 \cdot 2 \cdot 5$

$4 = 2 \cdot 2$

$LCD = 2 \cdot 2 \cdot 5 = 20$

130

$$\frac{3}{40} + \frac{1}{2} \cdot \frac{1}{5} =$$

$$\frac{3}{40} + \frac{1}{10} =$$

$$\frac{3}{40} + \frac{1}{10} \left(\frac{4}{4}\right) =$$

$$\frac{3}{40} + \frac{4}{40} =$$

$$\frac{3+4}{40} =$$

$$\frac{7}{40} =$$

Prima 2, 3, 5, 7...

$$\begin{array}{r}
 2 \overline{) 40} \\
 \underline{20} \\
 2 \overline{) 20} \\
 \underline{10} \\
 2 \overline{) 10} \\
 \underline{5} \\
 5 \overline{) 5} \\
 \underline{5} \\
 1
 \end{array}$$

$$\begin{array}{r}
 2 \overline{) 40} \\
 \underline{20} \\
 2 \overline{) 20} \\
 \underline{5} \\
 5 \overline{) 5} \\
 \underline{5} \\
 1
 \end{array}$$

$$40 = 2 \cdot 2 \cdot 2 \cdot 5$$

$$10 = 2 \cdot 5$$

$$\begin{array}{l}
 \text{LCD} = 2 \cdot 2 \cdot 2 \cdot 5 \\
 = 40
 \end{array}$$

131

$$\frac{7}{18} + \frac{3}{5} \div \frac{27}{5} =$$

Prima 2, 3, 5, 7...

$$\frac{7}{18} + \frac{3}{5} \cdot \frac{5}{27} =$$

$$\frac{7}{18} + \frac{\cancel{3}}{\cancel{5}} \cdot \frac{\cancel{5}}{\cancel{3} \cdot \cancel{3} \cdot \cancel{3}} =$$

$$3 \overline{) 27}$$

$$3 \overline{) 9}$$

$$3 \overline{) 3}$$

$$1$$

$$27 = 3 \cdot 3 \cdot 3$$

$$\frac{7}{18} + \frac{1}{9} =$$

$$\text{LCD} = 18$$

$$\frac{7}{18} + \frac{1}{9} \left(\frac{2}{2}\right) =$$

$$\frac{7+2}{18} =$$

$$\frac{7}{18} + \frac{2}{18} =$$

$$\frac{9}{18} =$$

$$\frac{\cancel{3} \cdot \cancel{3}}{(2) \cdot \cancel{3} \cdot \cancel{3}} =$$

$$\frac{1}{2} =$$

$$132 \quad x+1=3$$

$$x+1-1=3-1$$

$$x=2$$

$$133 \quad x+8=3$$

$$x+\cancel{8}-\cancel{8}=3-8$$

$$x=-5$$

$$134 \quad x+4=-2$$

$$x+\cancel{4}-\cancel{4}=-2-4$$

$$x=-6$$

$$135 \quad x+3=3$$

$$x+\cancel{3}-\cancel{3}=3-3$$

$$x=0$$

$$136 \quad 2x=8$$

$$\frac{2x}{2} = \frac{8}{2}$$

$$x=4$$

137.

$$-2x = -10$$

$$\frac{-2x}{-2} = \frac{-10}{-2}$$

$$x = 5$$

138.

$$-2x = 4$$

$$\frac{-2x}{-2} = \frac{4}{-2}$$

$$x = -2$$

139.

$$2x + 1 = 11$$

$$2x + \cancel{x} - \cancel{x} = 11 - 1$$

$$2x = 10$$

$$\frac{2x}{2} = \frac{10}{2}$$

$$x = 5$$

140.

$$-2x + 2 = 10$$

$$-2x + \cancel{2} - \cancel{2} = 10 - 2$$

$$-2x = 8$$

$$\frac{-2x}{-2} = \frac{8}{-2}$$

$$x = -4$$

$$141) 60 = 5x + 5$$

$$60 - 5 = 5x + 5 - 5$$

$$55 = 5x$$

$$\frac{55}{5} = \frac{5x}{5}$$

$$11 = x$$

$$142) 3x = 33$$

$$\frac{3x}{3} = \frac{33}{3}$$

$$x = 11$$

$$143) 20 = 4x - 12$$

$$20 + 12 = 4x - 12 + 12$$

$$32 = 4x$$

$$\frac{32}{4} = \frac{4x}{4}$$

$$8 = x$$

144

$$-9 - 3x = -21$$

$$\cancel{-9} - 3x + \cancel{+9} = -21 + 9$$

$$-3x = -12$$

$$\frac{\cancel{-3}x}{\cancel{-3}} = \frac{-12}{\cancel{-3}}$$

$$x = 4$$

145

$$-5x + 9 = 44$$

$$\cancel{-5x} + \cancel{9} - \cancel{9} = 44 - 9$$

$$-5x = 35$$

$$\frac{\cancel{-5}x}{\cancel{-5}} = \frac{35}{\cancel{-5}}$$

$$x = -7$$

146

$$3x + 10 = 100$$

$$\cancel{3x} + \cancel{10} - \cancel{10} = 100 - 10$$

$$3x = 90$$

$$\frac{3x}{3} = \frac{90}{3}$$

$$x = 30$$

147

$$-2x + 13 = 43$$

$$-2x + 13 - 13 = 43 - 13$$

$$-2x = 30$$

$$\frac{-2x}{-2} = \frac{30}{-2}$$

$$x = -15$$

148

$$4x + 1 = 6x + 21$$

$$4x + 1 - 1 = 6x + 21 - 1$$

$$4x = 6x + 20$$

$$4x - 6x = 6x + 20 - 6x$$

$$-2x = 20$$

$$\frac{-2x}{-2} = \frac{20}{-2}$$

$$x = -10$$

$$(149) \quad 2(x+1) = 3x-77$$

$$2x+2 = 3x-77$$

$$2x+2-2 = 3x-77-2$$

$$2x = 3x-79$$

$$2x-3x = 3x-79-3x$$

$$-1x = -79$$

$$\frac{-1x}{-1} = \frac{-79}{-1}$$

$$x = 79$$

(150)

$$4(2x+1) = 3x+4$$

$$8x+4 = 3x+4$$

$$8x+4-4 = 3x+4-4$$

$$8x = 3x$$

$$8x-3x = 3x-3x$$

$$5x = 0$$

$$\frac{5x}{5} = \frac{0}{5}$$

$$x = 0$$

$$(151) \quad -8 + 5x = -28$$

$$\cancel{-8} + 5x + \cancel{8} = -28 + 8$$

$$5x = -20$$

$$\frac{5x}{5} = \frac{-20}{5}$$

$$x = -4$$

(152)

$$\frac{3}{4} = \frac{x}{24}$$

$$3(24) = 4(x) \quad \text{cross mult}$$

$$72 = 4x$$

$$\frac{72}{4} = \frac{\cancel{4x}}{\cancel{4}}$$

$$18 = x$$

(153)

$$\frac{11}{20} = \frac{x}{100}$$

$$11(100) = 20(x) \quad \text{cross mult}$$

$$1100 = 20x$$

$$\frac{1100}{20} = \frac{20x}{20}$$

$$55 = x$$

$$\textcircled{154} \quad \frac{13}{676} = \frac{x}{416}$$

$$13(416) = 676(x) \quad \text{Cross mult}$$

$$5408 = 676x$$

$$\frac{5408}{676} = \frac{676x}{676}$$

$$\textcircled{8 = x}$$

$$\textcircled{155} \quad \frac{28}{50} = \frac{x}{100}$$

$$28(100) = 50(x) \quad \text{Cross mult}$$

$$2800 = 50x$$

$$\frac{2800}{50} = \frac{50x}{50}$$

$$\textcircled{56 = x}$$

$$\textcircled{156} \quad \frac{3}{30} = \frac{x}{100}$$

$$3(100) = 30(x) \quad \text{Cross mult}$$

$$300 = 30x$$

$$\frac{300}{30} = \frac{30x}{30}$$

$$\textcircled{10 = x}$$

$$\textcircled{157} \quad \frac{2}{3}X = 600$$

$$\frac{3}{2} \left(\frac{2}{3}X \right) = \frac{3}{2} (600)$$

$$X = \frac{3}{2} \left(\frac{600}{1} \right)$$

$$X = \frac{1800}{2}$$

$$X = 900$$

$$\textcircled{158} \quad \frac{2}{5}X = 20$$

$$\frac{5}{2} \left(\frac{2}{5}X \right) = \frac{5}{2} (20)$$

$$X = \frac{5}{2} \left(\frac{20}{1} \right)$$

$$X = \frac{100}{2}$$

$$X = 50$$

$$\textcircled{159} \quad -\frac{2}{3}X = 120$$

$$\frac{3}{-2} \left(-\frac{2}{3}X \right) = \frac{3}{-2} (120)$$

$$X = \frac{3}{-2} \left(\frac{120}{1} \right)$$

$$X = \frac{360}{-2}$$

$$X = -180$$

$$\textcircled{160} \quad \frac{x}{3} = 40$$

$$\frac{3}{7} \left(\frac{x}{3} \right) = \frac{3}{1} (40)$$

$$x = \frac{3}{1} \left(\frac{40}{1} \right)$$

$$x = \frac{120}{1}$$

$$\textcircled{x = 120}$$

$$\textcircled{161} \quad \frac{x}{-2} = 60$$

$$\frac{-2}{1} \left(\frac{x}{-2} \right) = \frac{-2}{1} (60)$$

$$x = \frac{-2}{1} \left(\frac{60}{1} \right)$$

$$x = \frac{-120}{1}$$

$$\textcircled{x = -120}$$

$$\textcircled{162} \quad \frac{x}{6} + 1 = \frac{x}{2} - 1 \quad \text{LCD} = 6$$

$$\frac{x}{6} (6) + \frac{1}{1} (6) = \frac{x}{2} (6) - \frac{1}{1} (6)$$

$$x(1) + 1(6) = x(3) - 1(6) \quad -2x = -12$$

$$1x + 6 = 3x - 6$$

$$1x + 6 - 6 = 3x - 6 - 6$$

$$1x = 3x - 12$$

$$1x - 3x = 3x - 12 - 3x$$

$$\frac{-2x}{-2} = \frac{-12}{-2}$$

$$\textcircled{x = 6}$$

$$\textcircled{163} \quad \frac{5x}{6} + 5 = \frac{5x}{2} - 5$$

$$\textcircled{\text{LCD} = 6}$$

$$\frac{5x}{6}(6) + \frac{5}{1}(6) = \frac{5x}{2}(6) - \frac{5}{1}(6)$$

$$5x(1) + 5(6) = 5x(3) - 5(6)$$

$$5x + 30 = 15x - 30$$

$$\cancel{5x} + \cancel{30} - \cancel{30} = 15x - 30 - 30$$

$$5x = 15x - 60$$

$$\cancel{5x} - 15x = \cancel{15x} - 60 - \cancel{15x}$$

$$-10x = -60$$

$$\frac{-10x}{-10} = \frac{-60}{-10}$$

$$\textcircled{x = 6}$$

$$164. \quad 2.25x + 100 = 2.20x + 900$$

$$2.25x + 100 - 100 = 2.20x + 900 - 100$$

$$2.25x = 2.20x + 800$$

$$2.25x - 2.20x = \cancel{2.20x} + 800 - \cancel{2.20x}$$

$$.05x = 800$$

$$\frac{.05x}{.05} = \frac{800}{.05}$$

$$x = 16,000$$

$$165. \quad 3.40x + 10 = 3.30x + 490$$

$$3.40x + 10 - 10 = 3.30x + 490 - 10$$

$$3.40x = 3.30x + 480$$

$$3.40x - 3.30x = \cancel{3.30x} + 480 - \cancel{3.30x}$$

$$.10x = 480$$

$$\frac{.10x}{.10} = \frac{480}{.10}$$

$$x = 4,800$$

$$166 \quad h = \frac{A}{4} \quad A =$$

$$4(h) = 4\left(\frac{A}{4}\right)$$

$$4h = A$$

$$167 \quad x + y = m \quad y =$$

$$x + y - x = m - x$$

$$y = m - x$$

$$168 \quad 4x + 2y = 10 \quad y =$$

$$4x + 2y - 4x = 10 - 4x$$

$$2y = 10 - 4x$$

$$\frac{2y}{2} = \frac{10}{2} - \frac{4x}{2}$$

$$y = 5 - 2x$$

$$\text{OR}$$
$$y = -2x + 5$$

$$(169) \quad 2x + 4y = 12$$

$$y =$$

$$2x + 4y - 2x = 12 - 2x$$

$$4y = 12 - 2x$$

$$\frac{4y}{4} = \frac{12}{4} - \frac{2x}{4}$$

$$y = 3 - \frac{2}{4}x$$

$$y = 3 - \frac{(2)(1)}{(4)(2)}x$$

$$y = 3 - \frac{1}{2}x \quad \text{OR}$$

$$y = -\frac{1}{2}x + 3$$

$$(170) \quad A = 4B + 5C$$

$$C =$$

$$A - 4B = 4B + 5C - 4B$$

$$A - 4B = 5C$$

$$\frac{A - 4B}{5} = \frac{5C}{5} \quad \text{OR}$$

$$\frac{A}{5} - \frac{4B}{5} = C$$

$$(171) \quad \frac{a}{2} = c \quad a =$$

$$2\left(\frac{a}{2}\right) = 2(c)$$

$$a = 2c$$

$$(172) \quad y - 7 = x \quad y =$$

$$y - 7 + 7 = x + 7$$

$$y = x + 7$$

$$(173) \quad x + 3y = 12 \quad y =$$

$$x + 3y - x = 12 - x$$

$$3y = 12 - x$$

$$\frac{3y}{3} = \frac{12}{3} - \frac{x}{3}$$

$$y = 4 - \frac{1}{3}x$$

OR

$$y = -\frac{1}{3}x + 4$$

$$174 \quad m = 2x + 2y$$

$$y =$$

$$m - 2x = 2x + 2y - 2x$$

$$m - 2x = 2y$$

$$\frac{m}{2} - \frac{2x}{2} = \frac{2y}{2}$$

$$\frac{m}{2} - x = y$$

$$\frac{1}{2}m - x = y \quad \text{OR}$$

$$175 \quad -3x + 8x =$$

$$5x =$$

$$176,$$

$$-9x - (-2x) =$$

$$-9x + 2x =$$

$$-7x =$$

$$(177) \quad 4x - 2(3x - 1) =$$
$$4x - 6x + 2 =$$

$$-2x + 2 =$$

$$(178) \quad 5x - 4(6y - 2x) + 2y =$$
$$5x - 24y + 8x + 2y =$$

$$13x - 22y =$$

$$(179) \quad -6x^2 - 3x + 10 - 2x^2 + 5x - 12 =$$

$$-8x^2 + 2x - 2 =$$

$$(180) \quad (-2x^2 - 3x - 7) + (4x^2 - 8x + 1) =$$
$$-2x^2 - 3x - 7 + 4x^2 - 8x + 1 =$$

$$2x^2 - 11x - 6 =$$

$$(181) \quad (-2x^2 - 6x - 7) - (5x^2 + 8x + 2) =$$
$$-2x^2 - 6x - 7 - 5x^2 - 8x - 2 =$$

$$-7x^2 - 14x - 9 =$$

$$(182) \quad 2(x-7) =$$

$$2x - 14 =$$

$$(183) \quad 3(2-x) =$$

$$6 - 3x =$$

$$(184) \quad 4(2x-3) =$$

$$8x - 12 =$$

$$(185) \quad -2(3x-5) =$$

$$-6x + 10 =$$

$$(186) \quad 3(2x-3y+7) =$$

$$6x - 9y + 21 =$$

$$(187) \quad -2(3x-2y-8) =$$

$$-6x + 4y + 16 =$$

$$188) \quad 2x(x^2 + 2x - 7) =$$

$$2x^3 + 4x^2 - 14x =$$

$$189) \quad 3x(2x^2 - 6x + 5) =$$

$$6x^3 - 18x^2 + 15x =$$

$$190) \quad (x+2)(x+6) =$$

$$x^2 + 6x + 2x + 12 =$$

$$x^2 + 8x + 12 =$$

$$191) \quad (x-2)(x-6) =$$

$$x^2 - 6x - 2x + 12 =$$

$$x^2 - 8x + 12 =$$

$$192) \quad (x+2)(x-6) =$$

$$x^2 - 6x + 2x - 12 =$$

$$x^2 - 4x - 12 =$$

$$193. \quad (x-2)(x+6) =$$
$$x^2 + 6x - 2x - 12 =$$

$$x^2 + 4x - 12 =$$

$$194. \quad (2x+3)(3x+5) =$$

$$6x^2 + 10x + 9x + 15 =$$

$$6x^2 + 19x + 15 =$$

$$195. \quad (2x-3)(3x-5) =$$

$$6x^2 - 10x - 9x + 15 =$$

$$6x^2 - 19x + 15 =$$

$$196. \quad (2x+3)(3x-5) =$$

$$6x^2 - 10x + 9x - 15 =$$

$$6x^2 - x - 15 =$$

$$6x^2 - x - 15 =$$

197.

$$(2x-3)(3x+5) =$$

$$6x^2 + 10x - 9x - 15 =$$

$$6x^2 + 1x - 15 =$$

$$6x^2 + x - 15 =$$

198.

$$(x+3)(x-3) =$$

$$x^2 - 3x + 3x - 9 =$$

$$x^2 - 9 =$$

199.

$$(x-3)(x-3) =$$

$$x^2 - 3x - 3x + 9 =$$

$$x^2 - 6x + 9 =$$

200.

$$(x-5)(x+5) =$$

$$x^2 + 5x - 5x - 25 =$$

$$x^2 - 25 =$$

$$201. \quad (x-5)(x-5) =$$
$$x^2 - 5x - 5x + 25 =$$

$$x^2 - 10x + 25 =$$

$$202. \quad (2x+3)(2x-3) =$$
$$4x^2 - 6x + 6x - 9 =$$

$$4x^2 - 9 =$$

$$203. \quad (2x-3)(2x-3) =$$
$$4x^2 - 6x - 6x + 9 =$$

$$4x^2 - 12x + 9 =$$

$$204. \quad (x-3)^2 =$$

$$(x-3)(x-3) =$$

$$x^2 - 3x - 3x + 9 =$$

$$x^2 - 6x + 9 =$$

205

$$(2x-3)^2 =$$

$$(2x-3)(2x-3) =$$

$$4x^2 - 6x - 6x + 9 =$$

$$4x^2 - 12x + 9 =$$

206

$$(2x-3y)^2 =$$

$$(2x-3y)(2x-3y) =$$

$$4x^2 - 6xy - 6xy + 9y^2 =$$

$$4x^2 - 12xy + 9y^2 =$$

207

$$(x+2)(x^2+3x+3) =$$

$$x^3 + 3x^2 + 3x + 2x^2 + 6x + 6 =$$

$$x^3 + 5x^2 + 9x + 6 =$$

208.

$$(x-2)(x^2-3x-7) =$$

$$x^3 - 3x^2 - 7x - 2x^2 + 6x + 14 =$$

$$x^3 - 5x^2 - x + 14 =$$

$$x^3 - 5x^2 - x + 14 =$$

209.

$$(2x+3)(x^2+2x+5) =$$

$$2x^3 + 4x^2 + 10x + 3x^2 + 6x + 15 =$$

$$2x^3 + 7x^2 + 16x + 15 =$$

210.

$$(2x-3)(x^2+3x+7) =$$

$$2x^3 + 6x^2 + 14x - 3x^2 - 9x - 21 =$$

$$2x^3 + 3x^2 + 5x - 21 =$$

$$211. (2x+3)(2x^2+6x+5)$$

$$4x^3 + 6x^2 + 10x + 6x^2 + 18x + 15 =$$

$$4x^3 + 12x^2 + 28x + 15 =$$

$$212. (2x-3)(2x^2-3x+2) =$$

$$4x^3 - 6x^2 + 4x - 6x^2 + 9x - 6 =$$

$$4x^3 - 12x^2 + 13x - 6 =$$

$$213. (2a+3b)(2a+5b+7) =$$

$$4a^2 + 10ab + 14a + 6ab + 15b^2 + 21b =$$

$$4a^2 + 16ab + 14a + 15b^2 + 21b =$$

$$214. (2a-3b)(3a-5b-2) =$$

$$6a^2 - 10ab + 4a - 9ab + 15b^2 + 6b =$$

$$6a^2 - 19ab + 4a + 15b^2 + 6b =$$

$$215. (2a+3b-2)(a+2b)$$

$$2a^2 + 4ab + 3ab + 6b^2 - 2a - 4b =$$

$$2a^2 + 7ab + 6b^2 - 2a - 4b =$$

$$216. (2a+5b-5)(2a+3b) =$$

$$4a^2 + 6ab + 10ab + 15b^2 - 10a - 15b =$$

$$4a^2 + 16ab + 15b^2 - 10a - 15b =$$

$$217. 2x^3(3x^4+4x^1)$$

$$6x^7 + 8x^4 =$$

$$218. 2x^2(1-5x^2) =$$

$$2x^2 - 10x^4 =$$

$$219. -2x^3(3-5x^4) =$$

$$-6x^3 + 10x^7 =$$

220

$$x^4 \cdot x^3 \cdot x^1 =$$

$$x^4 \cdot x^3 \cdot x^1 =$$

$$x^{4+3+1} =$$

$$x^8 =$$

221

$$(x^3)^3 =$$

$$x^{(3)(3)} =$$

$$x^9 =$$

222

$$(x^5)^{-5} =$$

$$x^{(5)(-5)} =$$

$$x^{-25} =$$

OR

$$\frac{1}{x^{25}} =$$

$$223 \quad (-3x)^2 =$$
$$(-3x)(-3x) =$$

$$9x^2 =$$

$$224 \quad (-2x)^3 =$$

$$(-2)^1 x^1)^3 =$$

$$(-2)^{1(3)} x^{1(3)} =$$

$$(-2)^3 x^3 =$$

$$(-2)(-2)(-2) x^3 =$$

$$4(-2) x^3 =$$

$$-8x^3 =$$

$$225 \quad (2xy^5)(-3x^2y^7) =$$

$$(2x^1y^5)(-3x^2y^7) =$$

$$-6x^{1+2}y^{5+7} =$$

$$-6x^3y^{12} =$$

$$226 \quad (-2x^3y^5)(-2xy) =$$

$$(-2x^3y^5)(-2x^1y^1) =$$

$$4x^{3+1}y^{5+1} =$$

$$4x^4y^6 =$$

$$227 \quad -2x^3y^4 \cdot 3x \cdot 5y^3 =$$

$$-2x^3y^4 \cdot 3x^1 \cdot 5y^3 =$$

$$-30x^{3+1}y^{4+3} =$$

$$-30x^4y^7 =$$

228

$$-2xy \cdot 5y^3 \cdot 3x^2 =$$

$$-2x^1y^1 \cdot 5y^3 \cdot 3x^2 =$$

$$-30x^{1+2}y^{1+3} =$$

$$-30x^3y^4 =$$

229 $\frac{x^4 y^5}{x y^9} =$

$$\frac{x^4 y^5}{x^1 y^9} =$$

$$\frac{x^{4-1}}{y^{9-5}} =$$

$$\frac{x^3}{y^4} =$$

230 $\frac{20x^5 y^7}{15xy} =$

$$\frac{20x^5 y^7}{15x^1 y^1} =$$

$$\frac{(2)(2)(\cancel{5})x^{5-1}y^{7-1}}{(3)(\cancel{5})} =$$

$$\frac{4x^4 y^6}{3} =$$

Prime 2, 3, 5, 7.

$$\begin{array}{r} 2 \overline{)20} \\ 2 \overline{)10} \\ 5 \overline{)5} \\ 1 \end{array}$$

$$\begin{array}{r} 3 \overline{)15} \\ 5 \overline{)5} \\ 1 \end{array}$$

$$\textcircled{231.} \quad \frac{-25x^3y^7}{-40xy^{10}} =$$

Primes 2, 3, 5, 7...

$$\begin{array}{r} \cancel{5} \cancel{25} \\ \cancel{5} \\ 1 \end{array}$$

$$\begin{array}{r} \cancel{2} \cancel{40} \\ \cancel{2} \cancel{40} \\ \cancel{2} \cancel{40} \\ \cancel{5} \cancel{5} \\ 1 \end{array}$$

$$\frac{-25x^3y^7}{-40x^1y^{10}} =$$

$$\cancel{(1)} \cancel{(5)} \cancel{(5)} x^{3-1}$$

$$\cancel{(1)} \cancel{(2)} \cancel{(2)} \cancel{(2)} \cancel{(5)} y^{10-7} =$$

$$\frac{5x^2}{8y^3} =$$

$$\textcircled{232.} \quad (-5xy^5)^2 =$$

$$(-5)^1 x^1 y^5)^2 =$$

$$(-5)^{1(2)} x^{1(2)} y^{5(2)} =$$

$$(-5)^2 x^2 y^{10} =$$

$$(-5)(-5) x^2 y^{10} =$$

$$\frac{25x^2y^{10}}{1} =$$

$$\textcircled{233} (-2x^3y)^3 =$$

$$(-2)^3 x^3 y^3 =$$

$$(-2)^{1(3)} x^{3(3)} y^{1(3)} =$$

$$(-2)^3 x^9 y^3 =$$

$$(-2)(-2)(-2) x^9 y^3 =$$

$$4(-2) x^9 y^3 =$$

$$\textcircled{-8x^9y^3 =}$$

$$\textcircled{234} \left(\frac{-5xy^4}{2z^5} \right)^2 =$$

$$\left(\frac{(-5)^1 x^1 y^4}{(2)^1 z^5} \right)^2 =$$

$$\frac{(-5)^{1(2)} x^{1(2)} y^{4(2)}}{(2)^{1(2)} z^{5(2)}} =$$

$$\rightarrow \frac{(-5)^2 x^2 y^8}{(2)^2 z^{10}} =$$

$$\frac{(-5)(-5) x^2 y^8}{(2)(2) z^{10}} =$$

$$\textcircled{\frac{25x^2y^8}{4z^{10}} =}$$

235

$$\left(\frac{-2x^3y}{3z^3} \right)^3 =$$

$$\left(\frac{(-2)^1 x^3 y^1}{(3)^1 z^3} \right)^3 =$$

$$\frac{(-2)^{1(3)} x^{3(3)} y^{1(3)}}{(3)^{1(3)} z^{3(3)}} =$$

$$\frac{(-2)^3 x^9 y^3}{(3)^3 z^9} =$$

$$\frac{(-2)(-2)(-2) x^9 y^3}{(3)(3)(3) z^9} =$$

$$\frac{4(-2) x^9 y^3}{9(3) z^9} =$$

$$\frac{-8 x^9 y^3}{27 z^9} =$$

236 $2x - 4 = \text{factor}$

$2(x - 2) =$

237 $4x^2 - 2x = \text{factor}$

$2x(2x - 1) =$

238 $x^2 + 4x + 3 = \text{factor}$

$(x + 1)(x + 3) =$

Possible
3.1

239 $x^2 - 7x + 10 = \text{factor}$

$(x - 2)(x - 5) =$

Possible
10.1
2.5

240 $x^2 - x - 6 = \text{factor}$

$(x + 2)(x - 3) =$

Possible
6.1
2.5

241 $x^2 - 3x - 40 = \text{factor}$

$(x + 5)(x - 8) =$

Possible
40.1
20.2
10.4
8.5

242. $x^2 - 10x + 16 = \text{factor}$

$$(x - 2)(x - 8) =$$

possible
16.1

$$2 \cdot 8$$

$$4 \cdot 4$$

possible

$$6 \cdot 1$$

$$15 \cdot 1$$

$$2 \cdot 3$$

$$3 \cdot 5$$

243. $6x^2 + 19x + 15 = \text{factor}$

$$(2x + 3)(3x + 5) =$$

possible

$$10 \cdot 1$$

$$2 \cdot 1$$

$$2 \cdot 5$$

244. $10x^2 + 9x + 2 = \text{factor}$

$$(2x + 1)(5x + 2) =$$

245. $10x^2 - 23x - 5 = \text{factor}$

$$(2x - 5)(5x + 1) =$$

$$10 \cdot 1$$

$$5 \cdot 1$$

$$2 \cdot 5$$

246. $x^2 - 16 = \text{factor}$

$$(x)^2 - (4)^2 =$$

$$(x + 4)(x - 4)$$

formula

$$a^2 - b^2 =$$

$$(a + b)(a - b)$$

247) $4x^2 - 9 =$ factor

$$(2x)^2 - (3)^2 =$$

$$(2x+3)(2x-3) =$$

Formula
 $a^2 - b^2$
 $(a+b)(a-b)$

248) $25x^2 - 49 =$ factor

$$(5x)^2 - (7)^2 =$$

$$(5x+7)(5x-7) =$$

Formula
 $a^2 - b^2$
 $(a+b)(a-b)$

249) $4x^2 - 9y^2 =$ factor

$$(2x)^2 - (3y)^2 =$$

$$(2x+3y)(2x-3y) =$$

Formula
 $a^2 - b^2$
 $(a+b)(a-b)$

250) $144x^2 - 49y^2 =$ factor

$$(12x)^2 - (7y)^2 =$$

$$(12x+7y)(12x-7y) =$$

Formula
 $a^2 - b^2$
 $(a+b)(a-b)$

251 $3x^3 - 48x =$ factor

$$3x(x^2 - 16) =$$

$$3x((x)^2 - (4)^2) =$$

$$3x(x+4)(x-4) =$$

formula
 $a^2 - b^2$
 $(a+b)(a-b)$

252. $2x^3 + 8x^2 + 6x =$ factor

$$2x(x^2 + 4x + 3) =$$

$$2x(x+1)(x+3) =$$

Possible
3.1

253 $2x(x-2) = 0$

Solve

but $2x = 0$ OR $x - 2 = 0$

$$\frac{2x}{2} = \frac{0}{2} \quad \text{OR} \quad x - 2 + 2 = 0 + 2$$

$$x = 0$$

OR $x = 2$

Solve

$$254 \quad -2x(x+3)=0$$

$$\text{or } -2x=0 \quad \text{OR} \quad x+3=0$$

$$\frac{-2x}{-2} = \frac{0}{-2} \quad \text{OR} \quad x+3-3=0-3$$

$$x=0 \quad \text{OR} \quad x=-3$$

Solve

$$255 \quad 2x(5-x)=0$$

$$\text{or } 2x=0 \quad \text{OR} \quad 5-x=0$$

$$\frac{2x}{2} = \frac{0}{2} \quad \text{OR} \quad 5-x-5=0-5$$

$$x=0 \quad \text{OR} \quad -x=-5$$

$$\frac{-1x}{-1} = \frac{-5}{-1}$$

$$x=5$$

Solve

$$256 \quad -5x(6-x)=0$$

$$\text{or } -5x=0 \quad \text{OR} \quad 6-x=0$$

$$\frac{-5x}{-5} = \frac{0}{-5} \quad \text{OR} \quad 6-x-6=0-6$$

$$x=0 \quad \text{OR} \quad -x=-6$$

$$\frac{-1x}{-1} = \frac{-6}{-1}$$

$$\text{OR} \quad x=6$$

^{Solve}
257. $(x+1)(x+3) = 0$

Let $x+1=0$ OR $x+3=0$

$x+1-1=0-1$ OR $x+3-3=0-3$

$x=-1$ OR $x=-3$

^{Solve}
258. $(x-2)(x-5) = 0$

Let $x-2=0$ OR $x-5=0$

$x-2+2=0+2$ OR $x-5+5=0+5$

$x=2$ OR $x=5$

^{Solve}
259. $(x-3)(x+2) = 0$

Let $x-3=0$ OR $x+2=0$

$x-3+3=0+3$ OR $x+2-2=0-2$

$x=3$ OR $x=-2$

260. $(x+5)(x-8) = 0$

Let $x+5=0$ OR $x-8=0$

$x+5-5=0-5$ OR $x-8+8=0+8$

$x=-5$ OR $x=8$

^{Solve}
261. $(2x+1)(3x+5) = 0$

∴ $2x+1=0$ OR $3x+5=0$

$2x+x-x=0-1$ OR $3x+\cancel{5}-\cancel{5}=0-5$

$2x=-1$ OR $3x=-5$

$\frac{2x}{2} = \frac{-1}{2}$ OR $\frac{3x}{3} = \frac{-5}{3}$

$x = -\frac{1}{2}$

OR $x = -\frac{5}{3}$

^{Solve}
262. $(2x+3)(7-x) = 0$

∴ $2x+3=0$ OR $7-x=0$

$2x+\cancel{3}-\cancel{3}=0-3$ OR $7-\cancel{x}+\cancel{7}=0-7$

$2x=-3$ OR $-x=-7$

$\frac{2x}{2} = \frac{-3}{2}$ OR $\frac{-x}{-1} = \frac{-7}{-1}$

$x = -\frac{3}{2}$

OR $x = 7$

$$263 \quad x^2 + 7x + 12 = 0$$

$$(x+3)(x+4) = 0$$

$$\text{At } x+3=0 \text{ OR } x+4=0$$

$$x+3-3=0-3 \text{ OR } x+4-x=0-4$$

$$x = -3 \text{ OR } x = -4$$

$$\begin{array}{l} 12.1 \\ 2.6 \\ 3.4 \end{array} \text{ Possible}$$

$$264 \quad x^2 + 8x + 12 = 0$$

$$(x+2)(x+6) = 0$$

$$\text{At } x+2=0 \text{ OR } x+6=0$$

$$x+2-2=0-2 \text{ OR } x+6-x=0-6$$

$$x = -2 \text{ OR } x = -6$$

$$\begin{array}{l} 12.1 \\ 6.2 \\ 3.4 \end{array} \text{ Possible}$$

$$265 \quad x^2 + 14x + 24 = 0$$

$$(x+2)(x+12) = 0$$

$$\text{At } x+2=0 \text{ OR } x+12=0$$

$$x+2-2=0-2 \text{ OR } x+12-x=0-12$$

$$x = -2 \text{ OR } x = -12$$

$$\begin{array}{l} 24.1 \\ 12.2 \\ 6.4 \\ 3.8 \end{array} \text{ Possible}$$

$$266 \quad x^2 + 11x + 24 = 0$$

$$(x+3)(x+8) = 0$$

$$\text{At } x+3=0 \text{ OR } x+8=0$$

$$x+3-3=0-3 \text{ OR } x+8-x=0-8$$

$$x = -3 \text{ OR } x = -8$$

$$\begin{array}{l} 24.1 \\ 12.2 \\ 6.4 \\ 3.8 \end{array} \text{ Possible}$$

267 $x^2 + 10x + 24 = 0$

$(x + 4)(x + 6) = 0$

or $x + 4 = 0$ or $x + 6 = 0$

$x + 4 - 4 = 0 - 4$ or $x + 6 - 6 = 0 - 6$

$x = -4$ or $x = -6$

28.1
12.2
6.4
3.8
possibly

268 $x^2 - 11x + 28 = 0$

$(x - 4)(x - 7) = 0$

or $x - 4 = 0$ or $x - 7 = 0$

$x - 4 + 4 = 0 + 4$ or $x - 7 + 7 = 0 + 7$

$x = 4$ or $x = 7$

28.1
14.2
4.7
possibly

269. $x^2 - 10x + 16 = 0$

$(x - 2)(x - 8) = 0$

or $x - 2 = 0$ or $x - 8 = 0$

$x - 2 + 2 = 0 + 2$ or $x - 8 + 8 = 0 + 8$

$x = 2$ or $x = 8$

16.1
2.8
4.4
possibly

270. $x^2 - 11x - 12 = 0$

$(x + 1)(x - 12) = 0$

or $x + 1 = 0$ or $x - 12 = 0$

$x + 1 - 1 = 0 - 1$ or $x - 12 + 12 = 0 + 12$

$x = -1$ or $x = 12$

12.1
6.2
3.4
possibly

271. $X^2 + 7X = -12$
 $X^2 + 7X + 12 = 0$

12-1
6-2
3-4 possible

$(X+3)(X+4) = 0$

or $X+3=0$ OR $X+4=0$

$X+3-3=0-3$ OR $X+4-4=0-4$

$X = -3$ OR $X = -4$

272. $X^2 + 12 = -8X$

$X^2 + 12 + 8X = 0$

$X^2 + 8X + 12 = 0$

$(X+2)(X+6) = 0$

or $X+2=0$ OR $X+6=0$

$X+2-2=0-2$ OR $X+6-6=0-6$

$X = -2$ OR $X = -6$

12-1
6-2
3-4 possible

273. $X^2 = -14X - 24$

$X^2 + 14X + 24 = 0$

$(X+2)(X+12) = 0$

or $X+2=0$ OR $X+12=0$

$X+2-2=0-2$ OR $X+12-12=0-12$

$X = -2$ OR $X = -12$

24-1
12-2
6-4
3-8 possible

274. $X(X+11) = -24$

$$X^2 + 11X = -24$$

$$X^2 + 11X + 24 = 0$$

$$(X+3)(X+8) = 0$$

either $X+3=0$ or $X+8=0$

$$X+3-3=0-3 \quad \text{OR} \quad X+8-8=0-8$$

$$X = -3$$

$$\text{OR} \quad X = -8$$

24.1
.12.2
6.4
3.8

Possibly

275.

$$X^2 + 10X + 26 = 2$$

$$X^2 + 10X + 26 - 2 = 0$$

$$X^2 + 10X + 24 = 0$$

$$(X+4)(X+6) = 0$$

either $X+4=0$ or $X+6=0$

$$X+4-4=0-4 \quad \text{OR} \quad X+6-6=0-6$$

$$X = -4$$

$$\text{OR} \quad X = -6$$

24.1
12.2
6.4
3.8

Possibly

$$276. \quad 4x^2 - 11x + 30 = 3x^2 + 2$$

$$4x^2 - 11x + 30 - 3x^2 - 2 = 0$$

$$x^2 - 11x + 28 = 0$$

$$(x - 4)(x - 7) = 0$$

wt $x - 4 = 0$ OR $x - 7 = 0$

$$x - 4 + 4 = 0 + 4 \quad \text{OR} \quad x - 7 + 7 = 0 + 7$$

$$x = 4 \quad \text{OR} \quad x = 7$$

28.1
14.2
4.7
Possible

$$277. \quad 6x^2 + 19x + 15 = 0$$

$$(2x + 3)(3x + 5) = 0$$

wt $2x + 3 = 0$ OR $3x + 5 = 0$

$$2x + 3 - 3 = 0 - 3 \quad \text{OR} \quad 3x + 5 - 5 = 0 - 5$$

$$2x = -3 \quad \text{OR} \quad 3x = -5$$

$$\frac{2x}{2} = \frac{-3}{2} \quad \text{OR} \quad \frac{3x}{3} = \frac{-5}{3}$$

$$x = -\frac{3}{2} \quad \text{OR} \quad x = -\frac{5}{3}$$

6.1
2.3
15.1
3.5
Possible

$$(278.) \quad 6x^2 + 13x + 6 = 0$$

$$(2x + 3)(3x + 2) = 0$$

$$\text{or } 2x + 3 = 0 \quad \text{or} \quad 3x + 2 = 0$$

$$2x + 3 - 3 = 0 - 3 \quad \text{or} \quad 3x + 2 - 2 = 0 - 2$$

$$2x = -3 \quad \text{or} \quad 3x = -2$$

$$\frac{2x}{2} = \frac{-3}{2} \quad \text{or} \quad \frac{3x}{3} = \frac{-2}{3}$$

$$x = -\frac{3}{2}$$

$$\text{or } x = -\frac{2}{3}$$

$$\begin{matrix} 6 \cdot 1 \\ 2 \cdot 3 \end{matrix} \quad \begin{matrix} 6 \cdot 1 \\ 2 \cdot 3 \end{matrix}$$

Possible

$$(279.) \quad 10x^2 + 9x + 2 = 0$$

$$(2x + 1)(5x + 2) = 0$$

$$\text{or } 2x + 1 = 0 \quad \text{or} \quad 5x + 2 = 0$$

$$2x + 1 - 1 = 0 - 1 \quad \text{or} \quad 5x + 2 - 2 = 0 - 2$$

$$2x = -1 \quad \text{or} \quad 5x = -2$$

$$\frac{2x}{2} = \frac{-1}{2} \quad \text{or} \quad \frac{5x}{5} = \frac{-2}{5}$$

$$x = -\frac{1}{2}$$

$$\text{or } x = -\frac{2}{5}$$

$$\begin{matrix} 10 \cdot 1 \\ 2 \cdot 5 \end{matrix} \quad \begin{matrix} 2 \cdot 1 \end{matrix}$$

Possible

280

$$6x^2 - 11x + 5 = 0$$

$$(6x - 5)(x - 1) = 0$$

$$\text{or } 6x - 5 = 0 \quad \text{OR} \quad x - 1 = 0$$

$$6x - 5 + 5 = 0 + 5 \quad \text{OR} \quad x - 1 + 1 = 0 + 1$$

$$6x = 5 \quad \text{OR} \quad x = 1$$

$$\frac{6x}{6} = \frac{5}{6} \quad \text{OR}$$

$$x = \frac{5}{6}$$

6.1
2.3

5.1
Possible

281

$$10x^2 - 23x - 5 = 0$$

$$(2x - 5)(5x + 1) = 0$$

$$\text{or } 2x - 5 = 0 \quad \text{OR} \quad 5x + 1 = 0$$

$$2x - 5 + 5 = 0 + 5 \quad \text{OR} \quad 5x + 1 - 1 = 0 - 1$$

$$2x = 5 \quad \text{OR} \quad 5x = -1$$

$$\frac{2x}{2} = \frac{5}{2} \quad \text{OR} \quad \frac{5x}{5} = \frac{-1}{5}$$

$$x = \frac{5}{2}$$

OR

$$x = -\frac{1}{5}$$

10.1
2.5

5.1
Possible

$$\textcircled{282} \quad X^2 + 2X + 10 = 0$$

$$a=1, b=2, c=10$$

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$X = \frac{-(2) \pm \sqrt{(2)^2 - 4(1)(10)}}{2(1)}$$

$$X = \frac{-2 \pm \sqrt{4 - 40}}{2}$$

$$X = \frac{-2 \pm \sqrt{-36}}{2}$$

$$X = \frac{-2 \pm 6i}{2}$$

$$X = -1 \pm 3i$$

$$\textcircled{X = -1 + 3i}$$

OR

$$\textcircled{X = -1 - 3i}$$

$$\textcircled{283.} \quad 1x^2 + 2x + 26 = 0$$

$$a=1, \quad b=2, \quad c=26$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(2) \pm \sqrt{(2)^2 - 4(1)(26)}}{2(1)}$$

$$x = \frac{-2 \pm \sqrt{4 - 104}}{2}$$

$$x = \frac{-2 \pm \sqrt{-100}}{2}$$

$$x = \frac{-2 \pm 10i}{2}$$

$$x = -1 \pm 5i$$

$$x = -1 + 5i \quad \text{OR} \quad x = -1 - 5i$$

$$\textcircled{284} \quad 1x^2 + 2x - 4 = 0$$

$$a=1, b=2, c=-4$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{-(2) \pm \sqrt{(2)^2 - 4(1)(-4)}}{2(1)}$$

$$x = \frac{-2 \pm \sqrt{4 + 16}}{2}$$

$$x = \frac{-2 \pm \sqrt{20}}{2}$$

$$x = \frac{-2 \pm \sqrt{4 \cdot 5}}{2}$$

$$x = \frac{-2 \pm \sqrt{4} \sqrt{5}}{2}$$

$$x = \frac{-2 \pm 2\sqrt{5}}{2}$$

$$x = -1 \pm \sqrt{5}$$

$$x = -1 \pm \sqrt{5}$$

$$\textcircled{x = -1 + \sqrt{5}} \quad \text{OR}$$

$$\textcircled{x = -1 - \sqrt{5}}$$

Prime 2, 3, 5, 7...

$$\begin{array}{l} \textcircled{2} \textcircled{20} \\ \textcircled{2} \textcircled{10} \\ \textcircled{5} \textcircled{5} \end{array}$$

285 $| X^2 + 14X + 24 = 0$

$a=1, b=14, c=24$

$$X = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$X = \frac{-(14) \pm \sqrt{(14)^2 - 4(1)(24)}}{2(1)}$$

$$X = \frac{-14 \pm \sqrt{196 - 96}}{2}$$

$$X = \frac{-14 \pm \sqrt{100}}{2}$$

$$X = \frac{-14 \pm 10}{2}$$

$$X = -7 \pm 5$$

$$X = -7 - 5 \quad \text{OR} \quad X = -7 + 5$$

$$X = -12$$

OR

$$X = \del{-7} - 2$$

286 $y = 2x - 7$ find slope and y-intercept

slope = $m = 2$

y-intercept = -7

formula

$$y = mx + b$$

Slope = m , y-intercept = b

287 $y = \frac{3}{2}x + 1$

Slope = $\frac{3}{2} = m$

y-intercept = 1

find slope and y-intercept

formula

$$y = mx + b$$

Slope = m y-intercept = b

288 $4x + 2y = 8$

$$4x + 2y - 4x = 8 - 4x$$

$$2y = 8 - 4x$$

$$\frac{2y}{2} = \frac{8}{2} - \frac{4x}{2}$$

$$y = 4 - 2x$$

$$y = -2x + 4$$

Slope = $m = -2$

y-intercept = 4

find slope and y-intercept

formula

$$y = mx + b$$

Slope = m y-intercept = b

289. $2x + 4y = 8$ Find Slope and y-intercept

$$2x + 4y - 2x = 8 - 2x$$

$$4y = 8 - 2x$$

$$\frac{4y}{4} = \frac{8}{4} - \frac{2x}{4}$$

$$y = 2 - \frac{2(1)}{4(2)}x$$

$$y = 2 - \frac{1}{2}x$$

$$y = -\frac{1}{2}x + 2$$

$$\text{Slope} = m = -\frac{1}{2}$$

$$\text{y-intercept} = 2$$

290. $(2, 4)$ and $(-5, -10)$ Find Slope
 $x_1 \quad y_1 \quad x_2 \quad y_2$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

$$m = \frac{(4) - (-10)}{(2) - (-5)}$$

$$m = \frac{4 + 10}{2 + 5}$$

$$m = \frac{14}{7}$$

$$m = 2$$

29! $(-4, -2)$ at $(-10, -5)$ find slope
 $x_1 \quad y_1 \quad x_2 \quad y_2$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

$$m = \frac{(-2) - (-5)}{(-4) - (-10)}$$

$$m = \frac{-2 + 5}{-4 + 10}$$

$$m = \frac{3}{6}$$

$$m = \frac{3(1)}{3(2)}$$

$$m = \frac{1}{2}$$

292 $m=4$, point = $(1, 12)$ find equation of the line
 x_1, y_1

$$y - y_1 = m(x - x_1)$$

$$y - (12) = 4(x - (1))$$

$$y - 12 = 4(x - 1)$$

$$y - 12 = 4x - 4$$

$$y - \cancel{12} + \cancel{12} = 4x - 4 + 12$$

$$y = 4x + 8$$

293 $m=50$, point = $(10, 900)$ find equation of the line
 x_1, y_1

$$y - y_1 = m(x - x_1)$$

$$y - (900) = 50(x - (10))$$

$$y - 900 = 50(x - 10)$$

$$y - 900 = 50x - 500$$

$$y - 900 + 900 = 50x - 500 + 900$$

$$y = 50x + 400$$

294. $m = -2$, Point = $(2, 20)$ find equation of the line
 x_1, y_1

$$y - y_1 = m(x - x_1)$$

$$y - (20) = -2(x - (2))$$

$$y - 20 = -2(x - 2)$$

$$y - 20 = -2x + 4$$

$$y - \cancel{20} + 20 = -2x + 4 + 20$$

$$y = -2x + 24$$

295. $m = -\frac{1}{2}$, Point = $(-4, -60)$ find equation of the line
 x_1, y_1

$$y - y_1 = m(x - x_1)$$

$$y - (-60) = -\frac{1}{2}(x - (-4))$$

$$y + 60 = -\frac{1}{2}(x + 4)$$

$$y + 60 = -\frac{1}{2}x + \frac{-1}{2}\left(\frac{4}{1}\right)$$

$$y + 60 = -\frac{1}{2}x + \frac{-4}{2}$$

$$y + 60 = -\frac{1}{2}x - 2$$

$$y + 60 - 60 = -\frac{1}{2}x - 2 - 60$$

$$y = -\frac{1}{2}x - 62$$

296 $y = -2x + 4$ graph

$$y = -2(0) + 4$$

$$y = 0 + 4$$

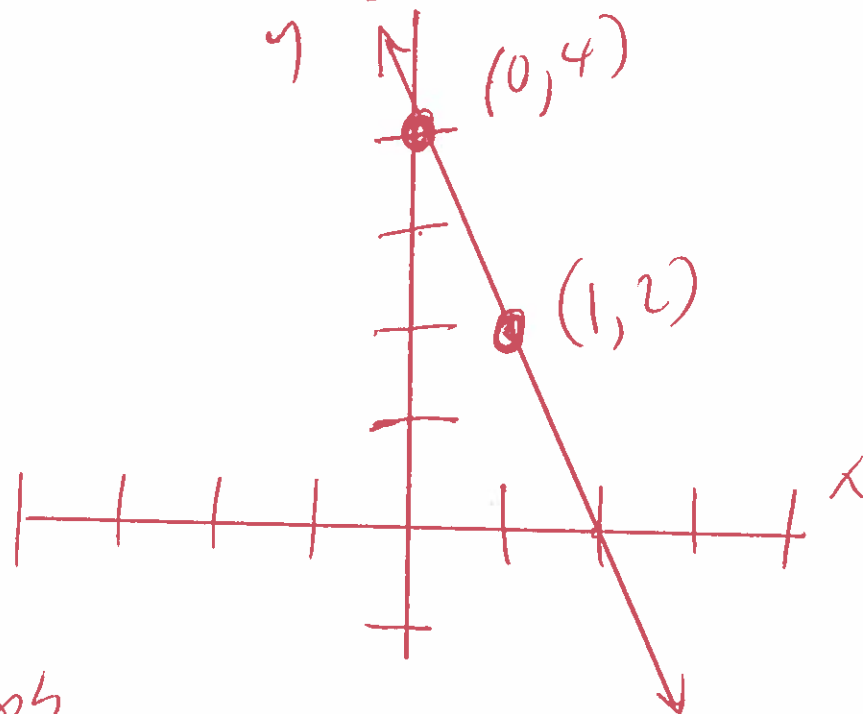
$$y = 4$$

$$y = -2(1) + 4$$

$$y = -2 + 4$$

$$y = 2$$

x	y
0	4
1	2



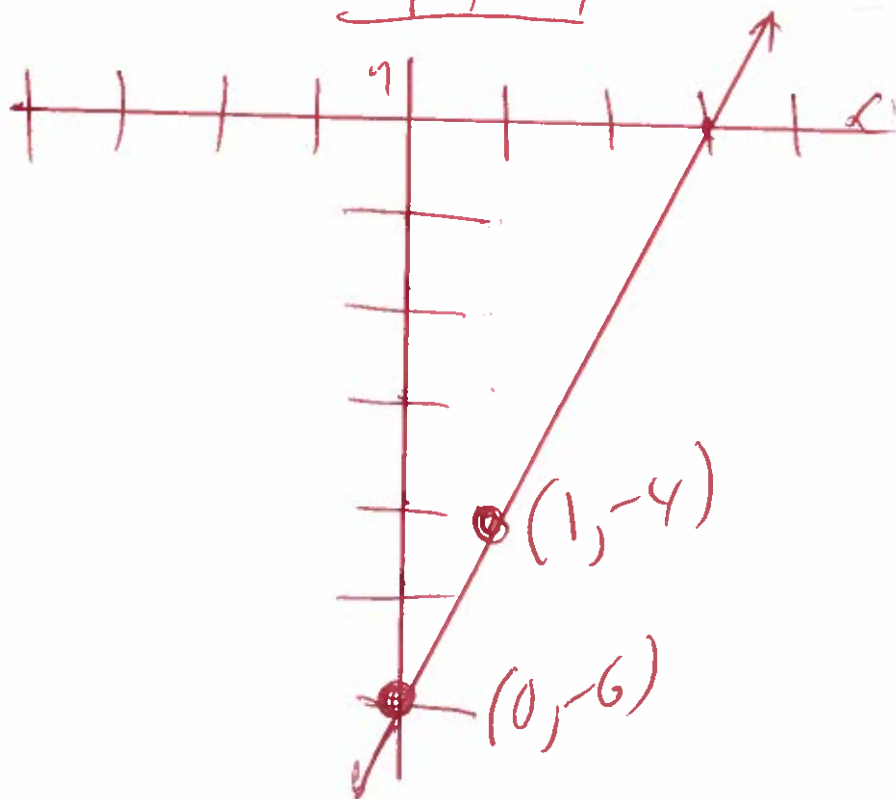
297 $y = 2x - 6$ graph

$$y = 2(0) - 6$$

$$y = 0 - 6$$

$$y = -6$$

x	y
0	-6
1	-4



298. $y = \frac{1}{2}x - 1$ graph

$$y = \frac{1}{2}(0) - 1$$

$$y = 0 - 1$$

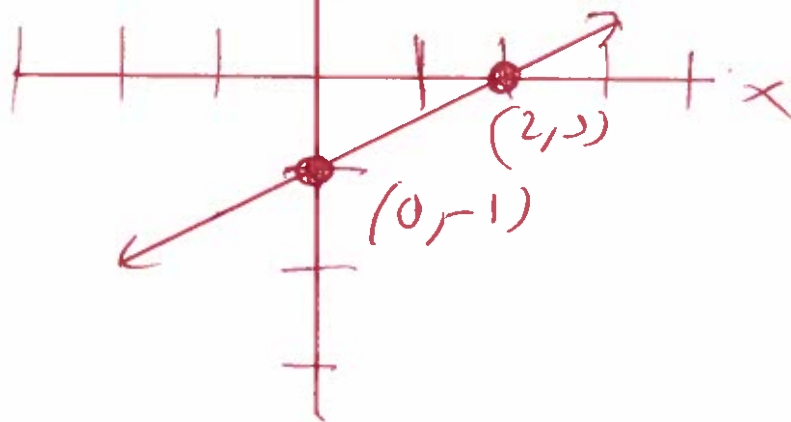
$$y = -1$$

$$y = \frac{1}{2}(2) - 1$$

$$y = 1 - 1$$

$$y = 0$$

x	y
0	-1
2	0



299. $y = \frac{3}{2}x - 1$ graph

$$y = \frac{3}{2}(0) - 1$$

$$y = 0 - 1$$

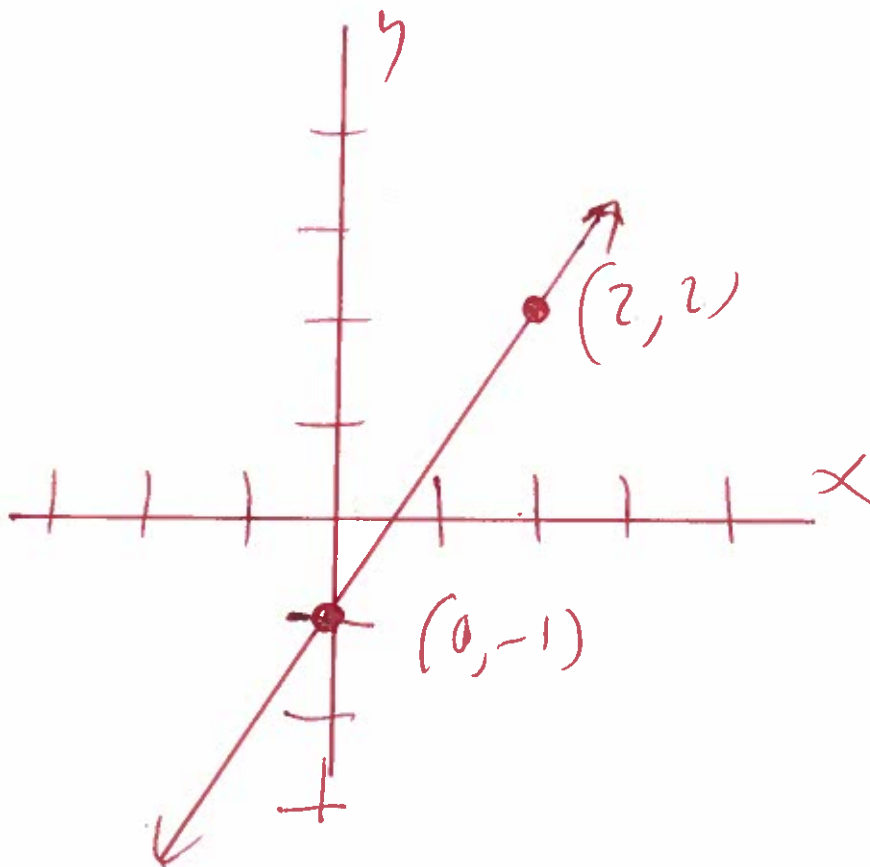
$$y = -1$$

$$y = \frac{3}{2}(2) - 1$$

$$y = 3 - 1$$

$$y = 2$$

x	y
0	-1
2	2



300 $y=6$ graph
 Same OR think

$y = 0x + 6$

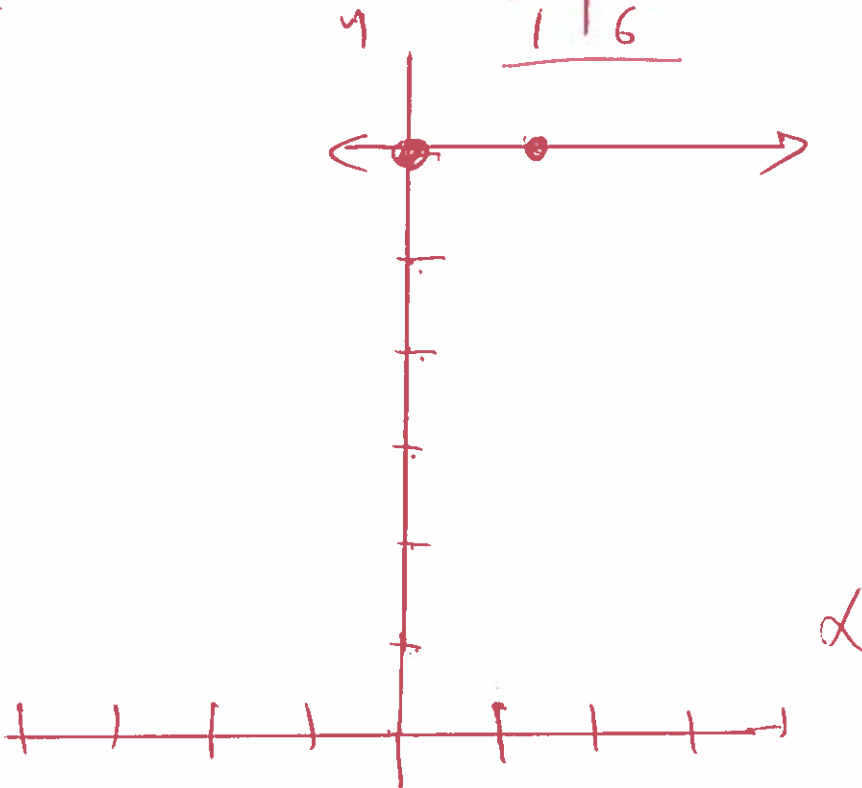
Example

$y = 0(0) + 6$
 $y = 0 + 6$
 $y = 6$

$y = 0(1) + 6$
 $y = 0 + 6$

$y = 6$

X	y
0	6
1	6



301 $y=-8$
 Same OR think

$y = 0x - 8$

Example

$y = 0(0) - 8$

$y = 0 - 8$

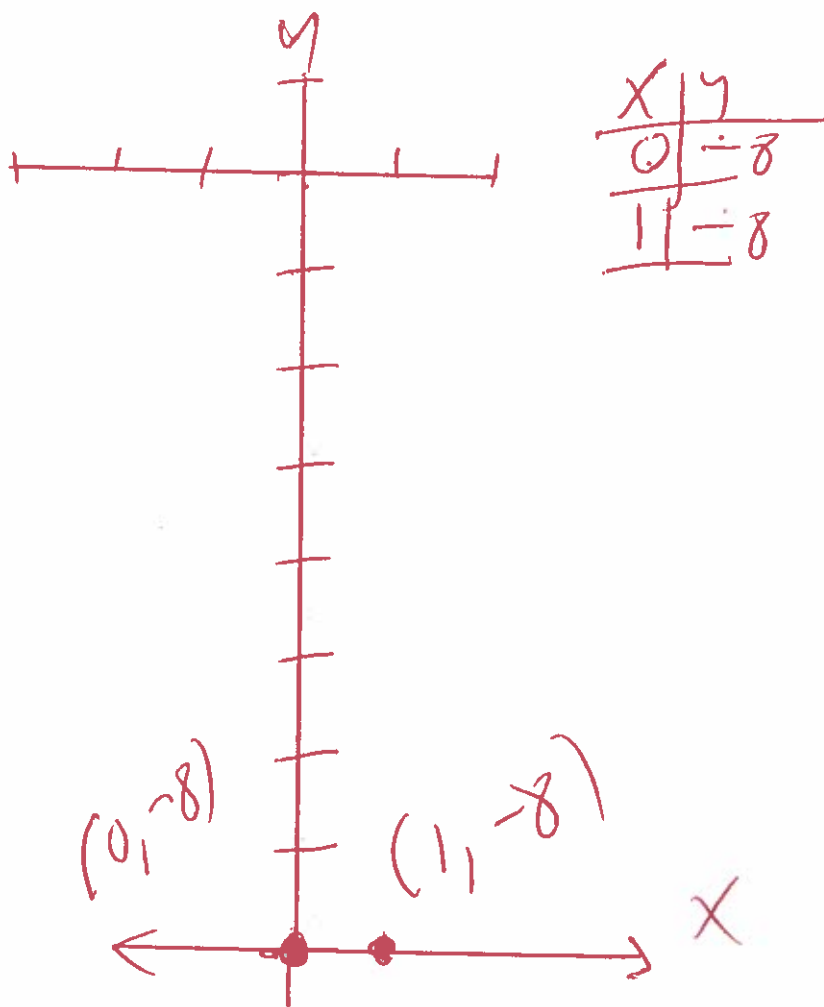
$y = -8$

$y = 0(1) - 8$

$y = 0 - 8$

$y = -8$

X	y
0	-8
1	-8



302

$$4x + 2y = 8$$

$$4x + 2y - 4x = 8 - 4x$$

$$2y = 8 - 4x$$

$$\frac{2y}{2} = \frac{8}{2} - \frac{4x}{2}$$

$$y = 4 - 2x$$

$$y = -2x + 4$$

formula $y = mx + b$

$$y = -2(0) + 4$$

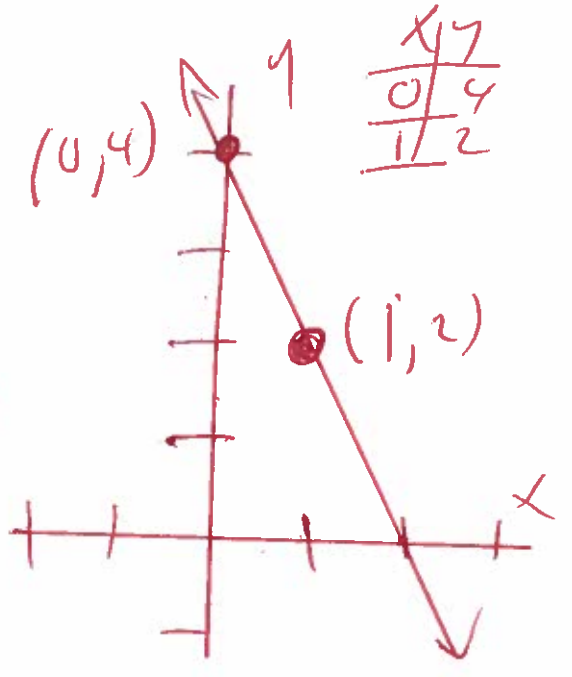
$$y = 0 + 4$$

$$y = 4$$

$$y = -2(1) + 4$$

$$y = -2 + 4$$

$$y = 2$$



303

$$4x - 2y = 16 \text{ graph}$$

$$4x - 2y - 4x = 16 - 4x$$

$$-2y = 16 - 4x$$

$$\frac{-2y}{-2} = \frac{16}{-2} - \frac{4x}{-2}$$

$$y = -8 + 2x$$

$$y = 2x - 8$$

formula $y = mx + b$

$$y = 2(0) - 8$$

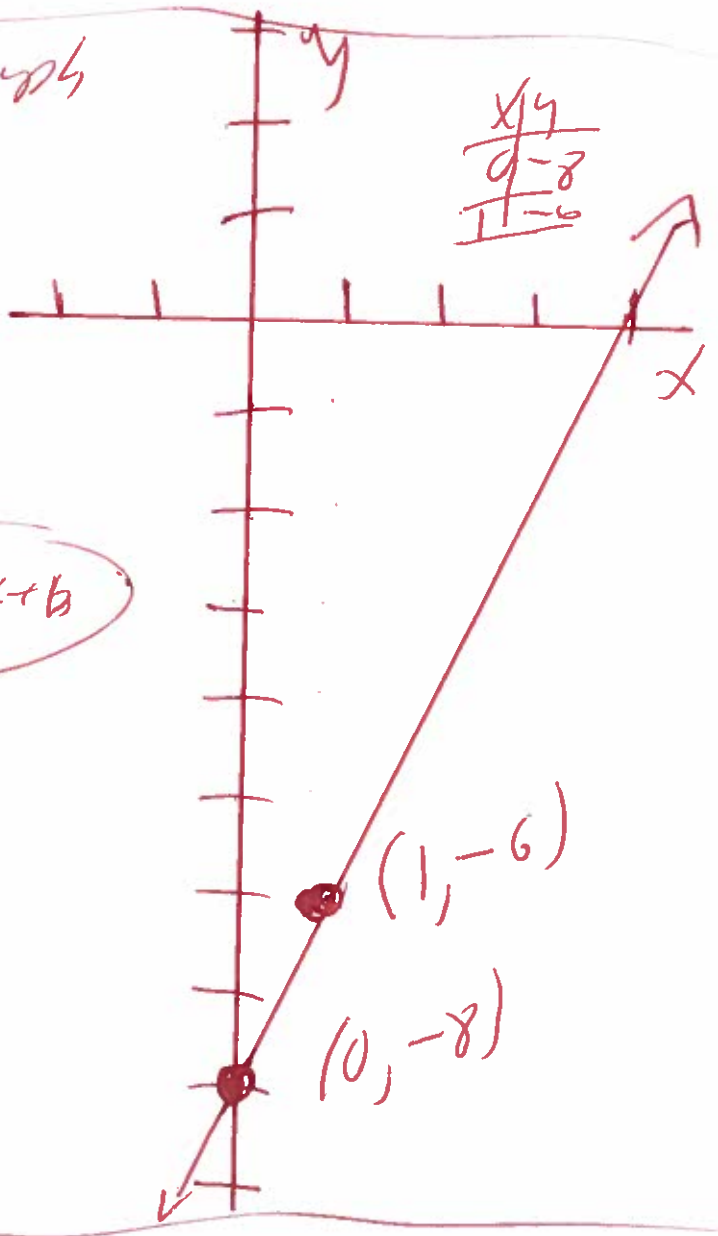
$$y = 0 - 8$$

$$y = -8$$

$$y = 2(1) - 8$$

$$y = 2 - 8$$

$$y = -6$$



304.

 $3x + 2y = 6$ graph find x - y -intercept

 find x -intercept let $y = 0$

$$3x + 2(0) = 6$$

$$3x + 0 = 6$$

$$3x = 6$$

$$\frac{3x}{3} = \frac{6}{3}$$

$$x = 2 \quad (2, 0)$$

 find y -intercept let $x = 0$

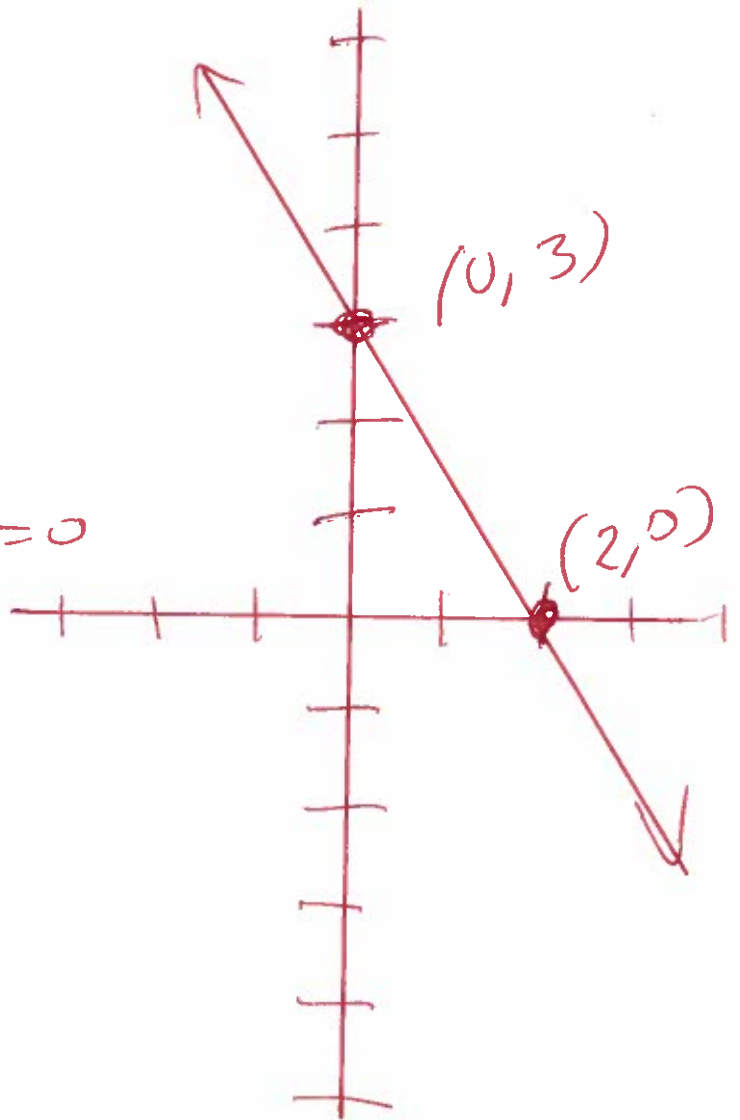
$$3(0) + 2y = 6$$

$$0 + 2y = 6$$

$$2y = 6$$

$$\frac{2y}{2} = \frac{6}{2}$$

$$y = 3 \quad (0, 3)$$



305

$2x - 5y = 10$ graph and find x - y intercept

find x -intercept let $y = 0$

$$2x - 5(0) = 10$$

$$2x - 0 = 10$$

$$2x = 10$$

$$\frac{2x}{2} = \frac{10}{2}$$

x -intercept

$x = 5$ $(5, 0)$

find y -intercept let $x = 0$

$$2(0) - 5y = 10$$

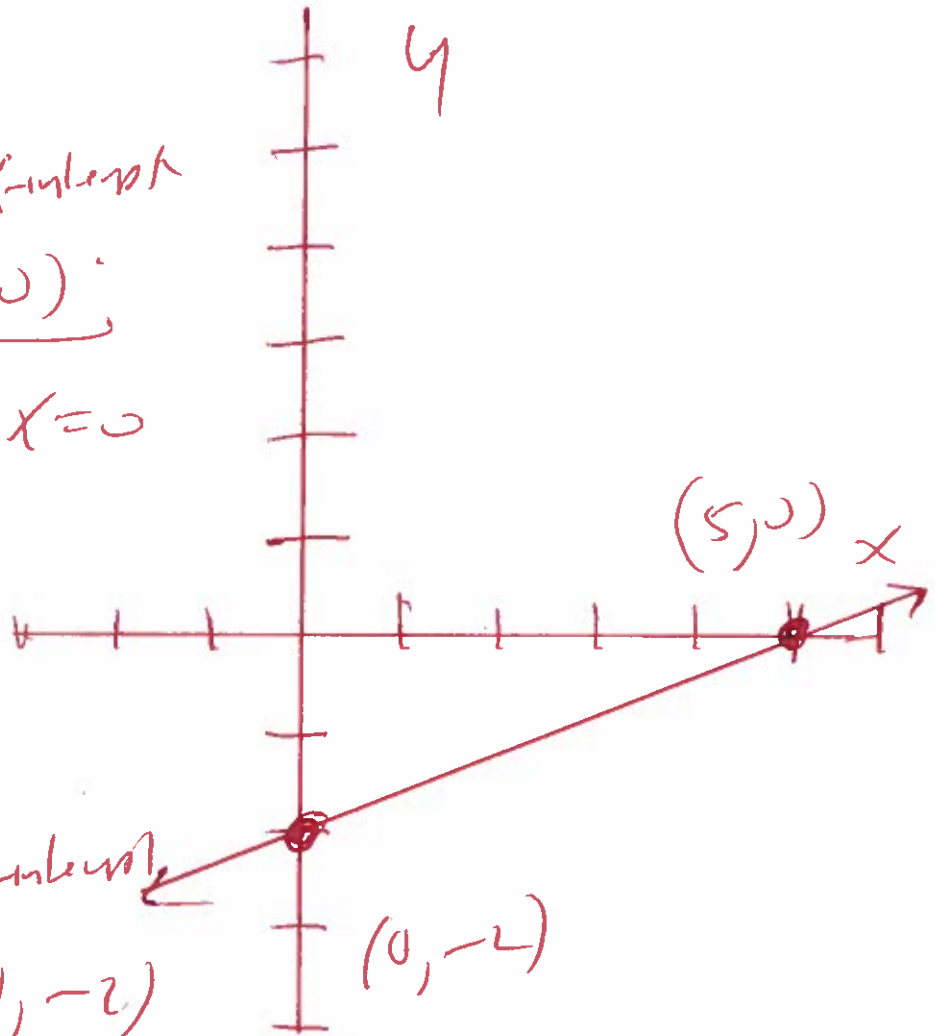
$$0 - 5y = 10$$

$$-5y = 10$$

$$\frac{-5y}{-5} = \frac{10}{-5}$$

y -intercept

$y = -2$ $(0, -2)$



306 $y = |x-2|$ graph

$y = |1-2|$

$y = |-1|$

$y = 1$

$y = |2-2|$

$y = |0|$

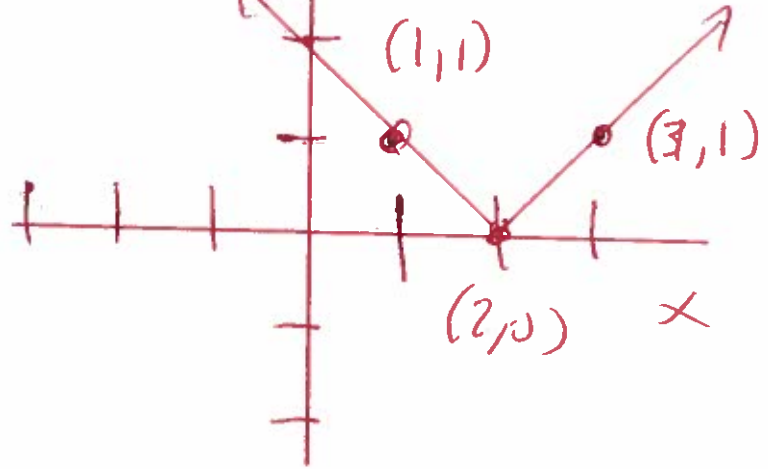
$y = 0$

$y = |3-2|$

$y = |1|$

$y = 1$

x	y
1	1
2	0
3	1



307 $y = x^2 - 4$ graph

$y = (-1)^2 - 4$

$y = (-1)(-1) - 4$

$y = 1 - 4$

$y = -3$

$y = (0)^2 - 4$

$y = (0)(0) - 4$

$y = 0 - 4$

$y = -4$

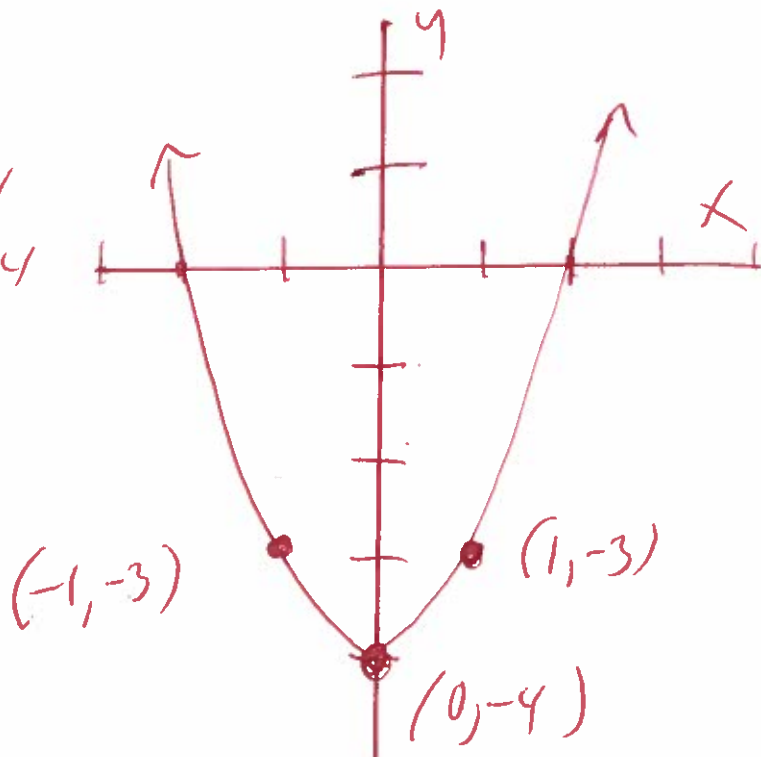
$y = (1)^2 - 4$

$y = (1)(1) - 4$

$y = 1 - 4$

$y = -3$

x	y
-1	-3
0	-4
1	-3



$$(308) \quad \sqrt{x+1} = 3$$

$$(\sqrt{x+1})^2 = (3)^2$$

$$x+1 = 9$$

$$x+1-1 = 9-1$$

$$x = 8$$

$$(309) \quad \sqrt{x-1} = 7$$

$$(\sqrt{x-1})^2 = (7)^2$$

$$x-1 = 49$$

$$x-1+1 = 49+1$$

$$x = 50$$

$$(310) \quad \sqrt{x} + 1 = 6$$

$$\sqrt{x} + x - x = 6 - 1$$

$$\sqrt{x} = 5$$

$$(\sqrt{x})^2 = (5)^2$$

$$x = 25$$

$$(311) \quad \sqrt{x} - 1 = 4$$

$$\sqrt{x} - \sqrt{+1} = 4 + 1$$

$$\sqrt{x} = 5$$

$$(\sqrt{x})^2 = (5)^2$$

$$x = 25$$

312

$$\sqrt{2x+1} = 9$$

$$(\sqrt{2x+1})^2 = (9)^2$$

$$2x+1 = 81$$

$$2x+1-1 = 81-1$$

$$2x = 80$$

$$\frac{2x}{2} = \frac{80}{2}$$

$$x = 40$$

313

$$\sqrt{3x+1} = \sqrt{x+9}$$

$$(\sqrt{3x+1})^2 = (\sqrt{x+9})^2$$

$$3x+1 = x+9$$

$$3x+1-x = x+9-1$$

$$2x = x+8$$

$$3x - 1x = 1x+8-1x$$

$$2x = 8$$

$$\frac{2x}{2} = \frac{8}{2}$$

$$x = 4$$

314 $x^2 = 16$

$$\sqrt{x^2} = \pm\sqrt{16}$$

$$x = \pm 4$$

$x = -4$ or $x = 4$

315. $(x+1)^2 = 16$

$$\sqrt{(x+1)^2} = \pm\sqrt{16}$$

$$x+1 = \pm 4$$

$x+1 = -4$ or $x+1 = 4$

$x+1-1 = -4-1$ or $x+1-1 = 4-1$

$x = -5$ or $x = 3$

316. $(x-1)^2 = 16$

$$\sqrt{(x-1)^2} = \pm\sqrt{16}$$

$$x-1 = \pm 4$$

$x-1 = -4$ or $x-1 = 4$

$x-1+1 = -4+1$ or $x-1+1 = 4+1$

$x = -3$ or $x = 5$

317

$$u + p = 55$$

$$u - p = 45$$

$$2u + 0 = 100$$

$$2u = 100$$

$$\frac{2u}{2} = \frac{100}{2}$$

$$u = 50$$

Subst

$$u + p = 55$$

$$50 + p = 55$$

$$\cancel{50} + p - \cancel{50} = 55 - 50$$

$$p = 5$$

$$(u, p) = (50, 5)$$

318

$$2u + 2p = 110$$

$$2u + 3p = 115$$

$$(2u + 2p = 110) (-3)$$

$$(2u + 3p = 115) (2)$$

$$-6u - 6p = -330$$

$$4u + 6p = 230$$

$$-2u + 0 = -100$$

$$-2u = -100$$

$$\frac{-2u}{-2} = \frac{-100}{-2}$$

$$u = 50$$

Subst

$$2u + 2p = 110$$

$$2(50) + 2p = 110$$

$$100 + 2p = 110$$

$$\cancel{100} + 2p - \cancel{100} = 110 - 100$$

$$2p = 10$$

$$\frac{2p}{2} = \frac{10}{2}$$

$$p = 5$$

$$(u, p) = (50, 5)$$

319.

$$x + y = 3$$

$$x - y = 1$$

$$2x + 0 = 4$$

$$2x = 4$$

$$\frac{2x}{2} = \frac{4}{2}$$

$$x = 2$$

$$(x, y) = (2, 1)$$

Subst

$$x + y = 3$$

$$2 + y = 3$$

$$2 + y - x = 3 - 2$$

$$y = 1$$

320.

$$5x + 2y = 7$$

$$6x + 3y = 9$$

$$(5x + 2y = 7) \quad (-3)$$

$$(6x + 3y = 9) \quad (2)$$

$$-15x - 6y = -21$$

$$12x + 6y = 18$$

$$-3x + 0 = -3$$

$$-3x = -3$$

$$\frac{-3x}{-3} = \frac{-3}{-3}$$

$$x = 1$$

$$(x, y) = (1, 1)$$

Subst

$$5x + 2y = 7$$

$$5(1) + 2y = 7$$

$$5 + 2y = 7$$

$$5 + 2y - 5 = 7 - 5$$

$$2y = 2$$

$$\frac{2y}{2} = \frac{2}{2}$$

$$y = 1$$

321

$$x + y = 3$$

$$y = 2x$$

$$x + (2x) = 3$$

$$1x + 2x = 3$$

$$3x = 3$$

$$\frac{3x}{3} = \frac{3}{3}$$

$$x = 1$$

Subst

$$x + y = 3$$

$$1 + y = 3$$

$$x + y - x = 3 - 1$$

$$y = 2$$

$$(x, y) = (1, 2)$$

322

$$x + y = 4$$

$$y = 2x + 1$$

$$x + (2x + 1) = 4$$

$$x + 2x + 1 = 4$$

$$1x + 2x + 1 = 4$$

$$3x + 1 = 4$$

$$3x + 1 - 1 = 4 - 1$$

$$3x = 3$$

$$\frac{3x}{3} = \frac{3}{3}$$

$$x = 1$$

Subst

$$x + y = 4$$

$$1 + y = 4$$

$$x + y - x = 4 - 1$$

$$y = 3$$

$$(x, y) = (1, 3)$$

323

$$2x < 8$$

$$\frac{2x}{2} < \frac{8}{2}$$

$$x < 4$$



$$(-\infty, 4)$$

324

$$-2x < 8$$

$$\frac{-2x}{-2} > \frac{8}{-2}$$

$$x > -4$$

divide by a negative
turn around the alligator



$$(-4, \infty)$$

325

$$-2x < -10$$

$$\frac{-2x}{-2} > \frac{-10}{-2}$$

$$x > 5$$

turn
alligator



$$(5, \infty)$$

326

$$2x < -12$$

$$\frac{2x}{2} < \frac{-12}{2}$$

$$x < -6$$



$$(-\infty, -6)$$

327.

$$2x + 1 < 11$$

$$2x + 1 - 1 < 11 - 1$$

$$2x < 10$$

$$\frac{2x}{2} < \frac{10}{2}$$

$$x < 5$$



$$(-\infty, 5)$$

328

$$-2x + 1 < -11$$

$$-2x + 1 - 1 < -11 - 1$$

$$-2x < -12$$

$$\frac{-2x}{-2} > \frac{-12}{-2}$$

$$x > 6$$

divide by a negative and
turn the alligator around



$$(6, \infty)$$

329

$$-2x - 2 \leq 14$$

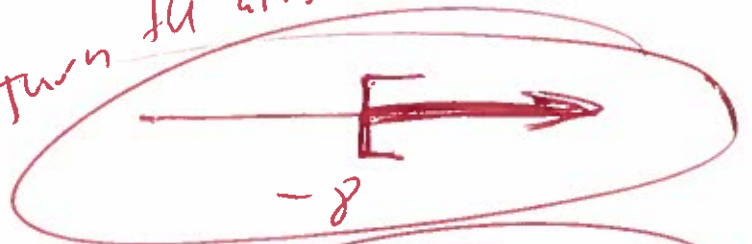
$$-2x - 2 + 2 \leq 14 + 2$$

$$-2x \leq 16$$

$$\frac{-2x}{-2} \geq \frac{16}{-2}$$

$$x \geq -8$$

Turn the alligator



$$[-8, \infty)$$

330. $-3x - 6 \leq 12$

$$-3x - 6 + 6 \leq 12 + 6$$

$$-3x \leq 18$$

$$\frac{-3x}{-3} \geq \frac{18}{-3}$$

divide by a negative and
turn the alligator around

$$x \geq -6$$



$$[-6, \infty)$$

331.

$$2x - 1 \leq -7$$

$$2x - 1 + 1 \leq -7 + 1$$

$$2x \leq -6$$

$$\frac{2x}{2} \leq \frac{-6}{2}$$

$$x \leq -3$$



$$(-\infty, -3]$$

334.

$$-2x - 2 \leq -12$$

$$-2x - 2 + 2 \leq -12 + 2$$

$$-2x \leq -10$$

$$\frac{-2x}{-2} \geq \frac{-10}{-2}$$

divide by a negative
turn alligator around

$$x \geq 5$$



$$[5, \infty)$$

333.

$$2x + 1 < 4x + 7$$

$$2x + 1 - 1 < 4x + 7 - 1$$

$$2x < 4x + 6$$

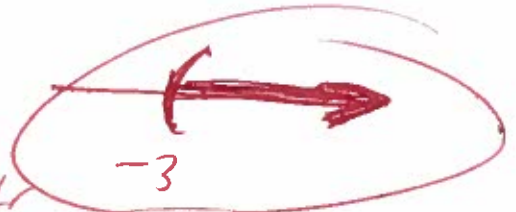
$$2x - 4x < 4x + 6 - 4x$$

$$-2x < 6$$

$$\frac{-2x}{-2} > \frac{6}{-2}$$

turn all signs around

$$x > -3$$



$$(-3, \infty)$$

334.

$$4x + 2 < 2x + 22$$

$$4x + 2 - 2 < 2x + 22 - 2$$

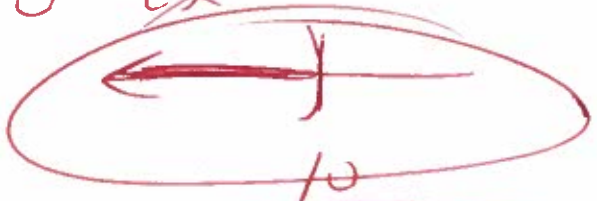
$$4x < 2x + 20$$

$$4x - 2x < 2x + 20 - 2x$$

$$2x < 20$$

$$\frac{2x}{2} < \frac{20}{2}$$

$$x < 10$$



$$(-\infty, 10)$$

335.

$$4x + 2 \leq 6x + 20$$

$$4x + 2 - 2 \leq 6x + 20 - 2$$

$$4x \leq 6x + 18$$

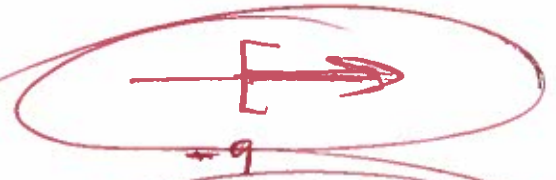
$$4x - 6x \leq 6x + 18 - 6x$$

$$-2x \leq 18$$

$$\frac{-2x}{-2} \geq \frac{18}{-2}$$

Turn the all signs around

$$x \geq -9$$



$$[-9, \infty)$$

$$336. \quad 3x + 2 \leq x + 42$$

$$3x + \cancel{2} - \cancel{2} \leq x + 42 - 2$$

$$3x \leq \cancel{x} + 40$$

$$3x - 1x \leq \cancel{1x} + 40 - \cancel{1x}$$

$$2x \leq 40$$

$$\frac{2x}{2} \leq \frac{40}{2}$$

$$x \leq 20$$



$$(-\infty, 20]$$

$$337. \quad |2x| = 4$$

for $|x| = a$

$$x = -a \text{ OR } x = a$$

or

$$2x = -4 \text{ OR } 2x = 4$$

$$\frac{2x}{2} = \frac{-4}{2} \text{ OR } \frac{2x}{2} = \frac{4}{2}$$

$$x = -2$$

$$\text{OR } x = 2$$

for $|x| = a$

$$x = -a \text{ OR } x = a$$

$$338. \quad |x+1| = 4$$

or

$$x+1 = -4 \text{ OR } x+1 = 4$$

$$x+1-1 = -4-1 \text{ OR } x+1-1 = 4-1$$

$$x = -5$$

$$\text{OR } x = 3$$

$$339 \quad |2x+4|=8$$

$$2x+4=-8 \quad \text{OR} \quad 2x+4=8$$

$$2x+4-4=-8-4 \quad \text{OR} \quad 2x+4-4=8-4$$

$$2x=-12 \quad \text{OR} \quad 2x=4$$

$$\frac{2x}{2}=\frac{-12}{2} \quad \text{OR} \quad \frac{2x}{2}=\frac{4}{2}$$

$$x=-6$$

$$\text{OR } x=2$$

formula

$$|x|=a$$

$$x=-a \quad \text{OR} \quad x=a$$

$$340. \quad |x+1|<3$$

$$-3 < x+1 < 3$$

$$-3-1 < x+1-1 < 3-1$$

$$-4 < x < 2$$

formula

$$|x|<a$$

$$-a < x < a$$



$$(-4, 2)$$

$$341. \quad |2x+4|\leq 12$$

$$-12 \leq 2x+4 \leq 12$$

$$-12-4 \leq 2x+4-4 \leq 12-4$$

$$-16 \leq 2x \leq 8$$

$$\frac{-16}{2} \leq \frac{2x}{2} \leq \frac{8}{2}$$

$$-8 \leq x \leq 4$$

formula

$$|x|\leq a$$

$$-a \leq x \leq a$$



$$[-8, 4]$$

$$342. |x+2| > 8$$

$$\text{or } x+2 < -8 \text{ OR } x+2 > 8$$

$$x+2-2 < -8-2 \text{ OR } x+2-2 > 8-2$$

$$x < -10 \text{ OR } x > 6$$



$$(-\infty, -10) \cup (6, \infty)$$

formula
 $|x| > a$
 $x < -a \text{ OR } x > a$

$$343. |2x+4| \geq 16$$

$$\text{or } 2x+4 \leq -16 \text{ OR } 2x+4 \geq 16$$

$$2x+4-4 \leq -16-4 \text{ OR } 2x+4-4 \geq 16-4$$

$$2x \leq -20 \text{ OR } 2x \geq 12$$

$$\frac{2x}{2} \leq \frac{-20}{2} \text{ OR } \frac{2x}{2} \geq \frac{12}{2}$$

$$x \leq -10 \text{ OR } x \geq 6$$



$$(-\infty, -10] \cup [6, \infty)$$

formula
 $|x| \geq a$
 $x \leq -a \text{ OR } x \geq a$

344. $|x+2|-3 \geq 5$

$|x+2|-3+3 \geq 5+3$

$|x+2| \geq 8$

or $x+2 \leq -8$ or $x+2 \geq 8$

$x+2-2 \leq -8-2$ or $x+2-2 \geq 8-2$

$x \leq -10$ or $x \geq 6$



$(-\infty, -10] \cup [6, \infty)$

formula
 $|x| > a$
 $x < -a$ or $x > a$

345. $\frac{x}{6} + 1 < \frac{x}{2} - 1$

LCD = 6

$\frac{x}{6}(6) + \frac{1}{1}(6) < \frac{x}{2}(6) - \frac{1}{1}(6)$ *Multiply by 6*

$x(1) + 1(6) < x(3) - 1(6)$ *turn all to same denom*

$|x+6 < 3x-6$

$|x+6-6 < 3x-6-6$

$|x < 3x-12$

$|x-3x < 3x-12-3x$

$-2x < -12$

$\frac{-2x}{-2} > \frac{-12}{-2}$

$x > 6$



$(6, \infty)$

$$346 \quad \frac{5x}{6} + 5 \leq \frac{5x}{2} - 5$$

$$\text{LCD} = 6$$

multiply
6

$$\frac{5x}{6}(6) + \frac{5}{1}(6) \leq \frac{5x}{2}(6) - \frac{5}{1}(6)$$

$$5x(1) + 5(6) \leq 5x(3) - 5(6)$$

$$5x + 30 \leq 15x - 30$$

$$5x + 30 - 30 \leq 15x - 30 - 30$$

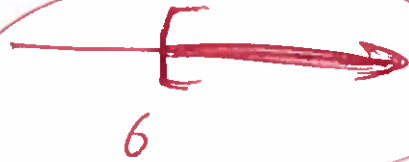
$$5x \leq 15x - 60$$

$$5x - 15x \leq 15x - 60 - 15x$$

$$-10x \leq -60$$

$$\frac{-10x}{-10} \geq \frac{-60}{-10}$$

$$x \geq 6$$



$$[6, \infty)$$

$$347 \quad 2.75x + 10 \leq 2.80x - 210$$

$$2.75x + 10 - 10 \leq 2.80x - 210 - 10$$

$$2.75x \leq 2.80x - 220$$

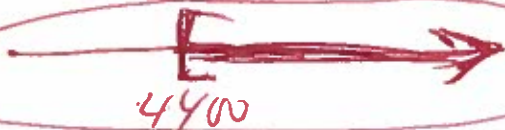
$$2.75x - 2.80x \leq 2.80x - 220 - 2.80x$$

$$-0.05x \leq -220$$

$$\frac{-0.05x}{-0.05} \geq \frac{-220}{-0.05}$$

$$x \geq 4400$$

turn alligator
around



$$[4400, \infty)$$