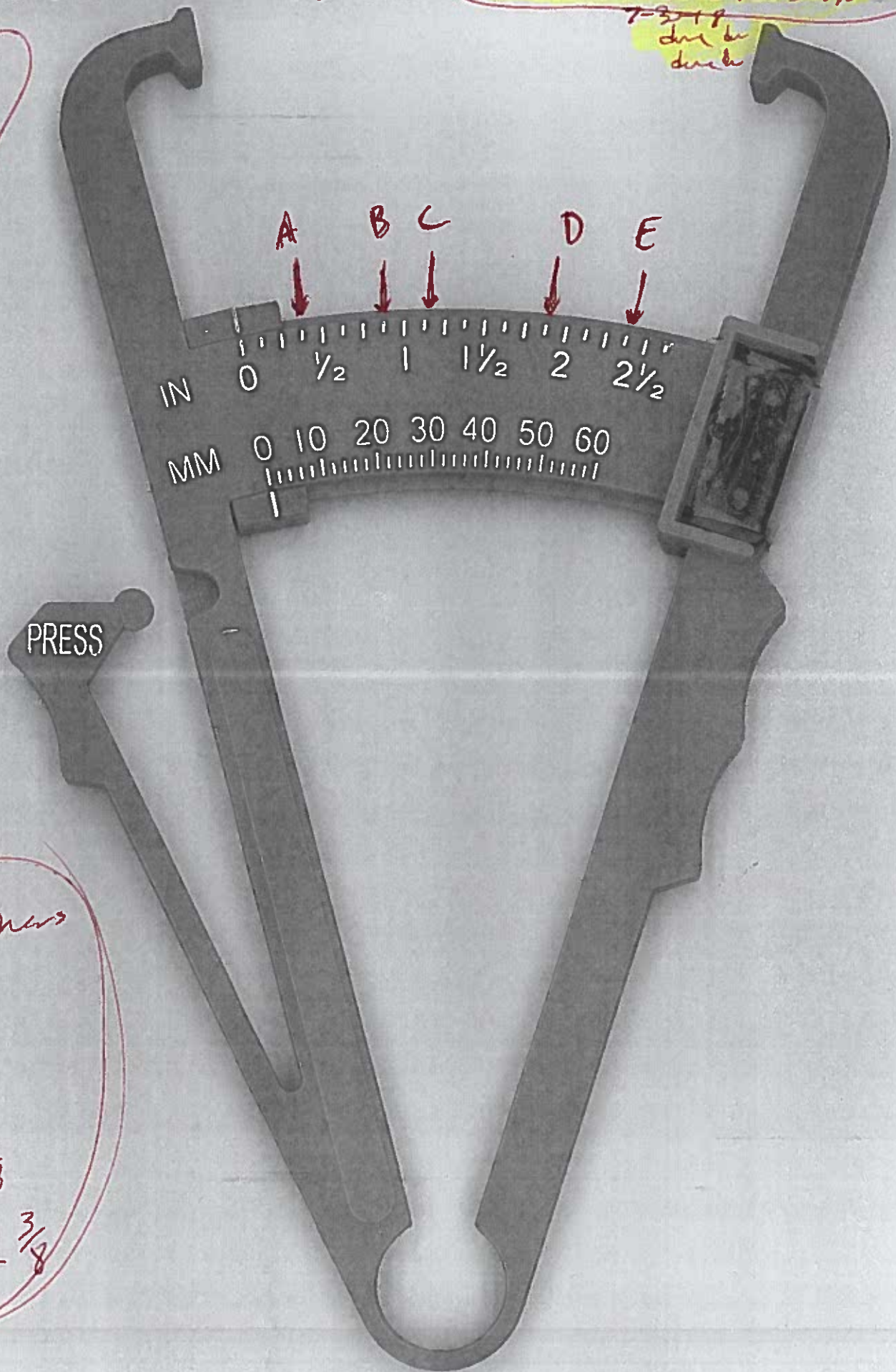
Find the value of A, B, C, D, E

warm up



answers

A = 3/8

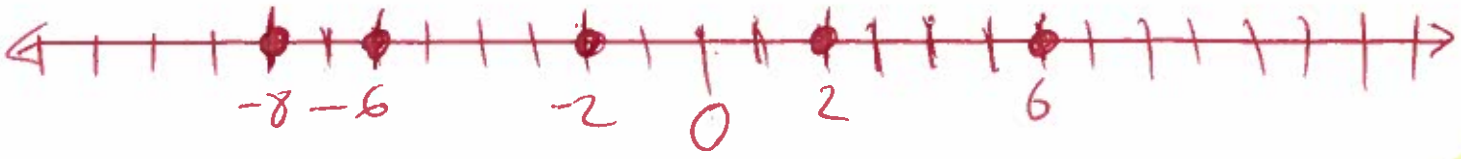
B = 7/8

C = 1 1/8

D = 1 7/8

E = 2 3/8

(1) 2, -2, 6, -6, -8 graph



2. $2x - y$, $x = 1$, $y = -8$

Math 0410 135-6666 TSI Step

$2(1) - (-8) =$

$2 + 8 =$

$10 =$

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3. $8 + 6 \cdot 4 - 12 =$ PEMDAS

$8 + 24 - 12 =$

$32 - 12 =$

$20 =$

---

4. $9 \cdot 5 - 6 \cdot 7 + (-25) =$ PEMDAS

$45 - 6 \cdot 7 + (-25) =$

$45 - 42 + (-25) =$

$45 - 42 - 25 =$

$3 - 25 =$

$-22 =$

5. $9(-12) \div [4(-9) - 7(-5)] =$

$9(-12) \div [-36 + 35] =$ PEMDAS

$9(-12) \div [-1] =$

$-108 \div [-1] =$

$108 =$

---

6. $x^2 - y$, $x = -4$, $y = 6$

$(-4)^2 - (6) =$ PEMDAS

$(-4)(-4) - (6) =$

$16 - 6 =$

$10 =$

---

7. find average PEMDAS

$$\frac{(8) + (-14) + (8) + (-14) + (1) + (3) + (-6)}{7} =$$

$$\frac{-14}{7} =$$

$-2 =$

8. $d - 4 = -11$

$d - 4 + 4 = -11 + 4$

$d = -7$

Ck

$d - 4 = -11$

$(-7) - 4 = -11$

$-7 - 4 = -11$

$-11 = -11$ ✓ Good

---

9. $\frac{n}{7} = -6$

$\frac{7}{1}\left(\frac{n}{7}\right) = \frac{7}{1}\left(\frac{-6}{1}\right)$ mult

$n = -\frac{42}{1}$

$n = -42$

---

10. $5x - 7x =$

$-2x$

11. $-2(6n+5) =$

$-12n - 10 =$

PEMDAS

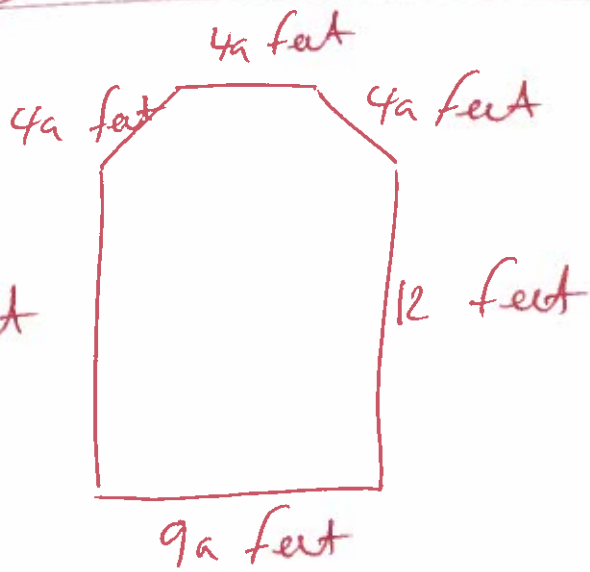
12. $5y - 2(y-1) + 4 =$

$5y - 2y + 2 + 4 =$

$3y + 6 =$

PEMDAS

13. Find perimeter



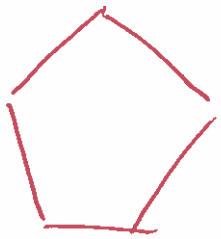
$P = 12 + 4a + 4a + 4a + 12 + 9a$

$P =$ $21a + 24$ feet

14. find perimeter

$P = 5(-3x+9)$

$P = -15x + 45$ inches



each side $-3x+9$ inches

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15. find area

$A = LW$

$A = (x-3)(39)$

$A = 39x - 117$ square kilometers

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16. $A = LW$ $L = 36$ ft, $W = 26$ ft.

$A = (36)(26)$

$A = 936$ square feet

---

17. $P = 2L + 2W$, $L = 18$ ft, $W = 16$ feet

$P = 2(18) + 2(16)$

$P = 36 + 32$

$P = 68$ feet

18

$3(5x-4)=16x$

PEMDAS

$15x-12=16x$

$15x-12+12=16x+12$

$15x=16x+12$

$15x-16x=16x+12-16x$

$-1x=12$

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

$x=-12$

19.

$-6(x+2)-42=4-28$ PEMDAS

$-6x-12-42=4-28$

$-6x-54=-24$

$-6x-54+54=-24+54$

$-6x=30$

$\frac{-6x}{-6}=\frac{30}{-6}$

$x=-5$

20. $\frac{x}{-3} = 5^2 - |-9| - (-7)$

$\frac{x}{-3} = (5)(5) - (9) - (-7)$

$\frac{x}{-3} = 25 - 9 + 7$ PEMDAS

$\frac{x}{-3} = 16 + 7$

$\frac{x}{-3} = 23$

$\frac{-3}{1}\left(\frac{1x}{-3}\right) = \frac{-3}{1}\left(\frac{23}{1}\right)$ Mult

$x = \frac{-69}{1}$

$x = -69$

21. $2x - 5 = 3x + 9$

$2x - 5 + 5 = 3x + 9 + 5$

$2x = 3x + 14$

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

$-1x = 14$

$\frac{-1x}{-1} = \frac{14}{-1}$

$x = -14$

22. $-13x - 20 = -11x + 80$

$-13x - 20 + 20 = -11x + 80 + 20$

$-13x = -11x + 100$

$-13x + 11x = -11x + 100 + 11x$

$-2x = 100$

$\frac{-2x}{-2} = \frac{100}{-2}$

$x = -50$

---

23. $3(y-2) = y-6$ PEMDAS

$3y - 6 = y - 6$

$3y - 6 + 6 = y - 6 + 6$

$3y = y$

$3y = 1y$

$3y - 1y = 1y - 1y$

$2y = 0$

$\frac{2y}{2} = \frac{0}{2}$

$y = 0$

24) $2t-2 = 3(t+5)$

PEMDAS

$2t-2 = 3t+15$

$2t-2+2 = 3t+15+2$

$2t = 3t+17$

$2t-3t = 3t+17-3t$

$-1t = 17$

$\frac{-1t}{-1} = \frac{17}{-1}$

$t = -17$

25) $5(3c-1)-1 = 12c+9$

PEMDAS

$15c-5-1 = 12c+9$

$15c-6 = 12c+9$

$15c-6+6 = 12c+9+6$

$15c = 12c+15$

$15c-12c = 12c+15-12c$

$3c = 15$

$\frac{3c}{3} = \frac{15}{3}$

$c = 5$

26 $5n + 15 = 50$

$5n + 15 - 15 = 50 - 15$

$5n = 35$

$\frac{5n}{5} = \frac{35}{5}$

$n = 7$

Ck

$5n + 15 = 50$

$5(7) + 15 = 50$

$35 + 15 = 50$

$50 = 50$ ✓

Good

---

27 $10 + 4t = 5(t+2)$ PEMDAS

$10 + 4t = 5t + 10$

$10 + 4t - 10 = 5t + 10 - 10$

$4t = 5t$

$4t - 5t = 5t - 5t$

$-1t = 0$

$\frac{-1t}{-1} = \frac{0}{-1}$

$t = 0$

28. During the women's basketball championship game, team A scored 6 more points than team B. Together, both teams scored a total of 156 points. How many points did the Champion team A score during the game?

let B = X points Loser

A = X+6 points Champion

$(X)+(X+6) = 156$ Total points

$X+X+6 = 156$

$2X+6 = 156$

$2X+6-6 = 156-6$

$2X = 150$

$\frac{2X}{2} = \frac{150}{2}$

$X = 75$ Loser

$X+6 =$

$75+6 =$ Champion

~~81~~ =

29) $\frac{-3}{8} \cdot \frac{5}{9} =$

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

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

$\frac{-5}{24} =$

Primes 2, 3, 5, 7 ...

2|8 3|9
2|4 3|3
2|2 1
1

---

30) $\frac{2}{3} \div \frac{5}{6} =$

$\frac{2}{3} \cdot \frac{6}{5} =$ rewrite

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

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

$\frac{4}{5} =$

Primes 2, 3, 5, 7 ...

2|6
3|3
1

31

$$\frac{56x^2}{15y} \div \frac{24x}{25y} =$$

$$\frac{56x^2}{15y} \cdot \frac{25y}{24x} = \text{rewrite}$$

Primes 2, 3, 5, 7, ..

56	15	24	25
2	3	2	5
28	5	12	5
2	5	6	5
14	1	2	1
7		3	
7		3	
1		1	

$$\frac{(2)(2)(2)(7)x^{\cancel{2}}}{(3)(5)y} \cdot \frac{(5)(5)y}{(2)(2)(2)(3)x} =$$

$$\frac{(2)(2)(2)(7)x^{\cancel{2}}}{(3)(5)y} \cdot \frac{(5)(5)y}{(2)(2)(2)(3)x} =$$

$$\frac{35x}{9} =$$

32

$$\frac{1}{15} + \frac{8}{15} =$$

Primes 2, 3, 5, 7...

9	15
3	3
3	5
1	5
	1

$$\frac{1+8}{15} =$$

$$\frac{9}{15} =$$

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

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

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

33

$\frac{1}{3} + \frac{1}{9} =$

LCD = 9

Prime 2, 3, 5, 7...

$\frac{1}{3}\left(\frac{3}{3}\right) + \frac{1}{9} =$

$3 \underline{| 3}$ → 1; $3 \underline{| 9}$, $3 \underline{| 3}$ → 1

$\frac{3}{9} + \frac{1}{9} =$

$3 = 3$

$9 = 3\ 3$

LCD = 3 · 3 = 9

$\frac{3+1}{9} =$

$\frac{4}{9} =$

34

$\frac{1}{4} - \frac{5}{18} =$

Prime 2, 3, 5, 7

$2 \underline{| 4}$, $2 \underline{| 2}$ → 1; $2 \underline{| 18}$, $3 \underline{| 9}$, $3 \underline{| 3}$ → 1

$\frac{1}{4}\left(\frac{9}{9}\right) - \frac{5}{18}\left(\frac{2}{2}\right) =$

$4 = 2 \cdot 2$

$18 = 2 \cdot 3 \cdot 3$

LCD = 2 2 · 3 · 3 = 36

$\frac{9}{36} - \frac{10}{36} =$

$\frac{9-10}{36} =$

$\frac{-1}{36} =$

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35. $\dfrac{\frac{2}{7}}{\frac{2}{9}} =$

$\frac{2}{7} \cdot \frac{9}{2} =$ rewrite

$\frac{9}{7} =$

36. $-35 = \frac{5}{17}x$

$\frac{17}{5}\left(\frac{-35}{1}\right) = \frac{17}{5}\left(\frac{5x}{17}\right)$ mult

$= x$

$\frac{17}{5}\left(\frac{(-1)(5)(7)}{1}\right)$

$\frac{-119}{1} = x$

$-119 = x$

37. $\frac{z}{5} = \frac{z}{8} - 4$

LCD = 40

Prime 2, 3, 5, 7

5 | 5 — 2 | 8 — 2 | 4 — 2 | 2 — 1

5 = 5

8 = 2·2·2

LCD = 2·2·2·5 = 40

$\frac{z}{5} = \frac{z}{8} - \frac{4}{1}$

$\frac{z}{5}(40) = \frac{z}{8}(40) - \frac{4}{1}(40)$

$z(8) = z(5) - 4(40)$

$8z = 5z - 160$

$8z - 5z = 5z - 160 - 5z$

$3z = -160$

$\frac{3z}{3} = \frac{-160}{3}$

$z = \frac{-160}{3}$

38. $\frac{1}{3} - \frac{y}{8} = \frac{7}{24}$

LCD = 24

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

3 | 3 — 2 | 8 — 2 | 4 — 2 | 2 — 2 | 12 — 2 | 6 — 3 | 3 — 1

3 = 3

8 = 2·2·2

24 = 2·2·2·3

LCD = 2·2·2·3 = 24

$\frac{1}{3}(24) - \frac{y}{8}(24) = \frac{7}{24}(24)$

$1(8) - y(3) = 7(1)$

$8 - 3y = 7$

$8 - 3y - 8 = 7 - 8$

$-3y = -1$

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

$y = \frac{1}{3}$

39 $\frac{x}{4} + 2 = \frac{1}{4}$ LCD = 4

$\frac{x}{4} + \frac{2}{1} = \frac{1}{4}$

$\frac{x}{4}(4) + \frac{2}{1}(4) = \frac{1}{4}(4)$ Mult

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

$1x + 8 = 1$

$1x + 8 - 8 = 1 - 8$

$1x = -7$

$x = -7$

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40 $\frac{y}{3} + 6 = \frac{y}{2} + 4$ LCD = 6

$\frac{y}{3} + \frac{6}{1} = \frac{y}{2} + \frac{4}{1}$

$\frac{y}{3}(6) + \frac{6}{1}(6) = \frac{y}{2}(6) + \frac{4}{1}(6)$ Mult by LCD

$y(2) + 6(6) = y(3) + 4(6)$ divide

$2y + 36 = 3y + 24$

$2y + 36 - 36 = 3y + 24 - 36$

$2y = 3y - 12$

$2y - 3y = 3y - 12 - 3y$

$-1y = -12$

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

$y = 12$

41. $-6.316 \times 1000 =$

$-6316. =$ Move decimal right 3 times

42. $\frac{38.541}{100} =$

$0.38541 =$ Move decimal left 2 times

43. $4.8x - 70 = 2.3x + 5$

$4.8x - 70 + 70 = 2.3x + 5 + 70$

$4.8x = 2.3x + 75$

$4.8x - 2.3x = 2.3x + 75 - 2.3x$

$2.5x = 75$

$\frac{2.5x}{2.5} = \frac{75}{2.5}$

$x = 30$

44. $\frac{16}{128} = \frac{24}{x}$

$16(x) = 128(24)$ Cross mult

$16x = 3072$

$\frac{16x}{16} = \frac{3072}{16}$

$x = 192$

45. Write the fraction as a percent

$\frac{9}{20}$

$\frac{9}{20} = \frac{x}{100}$

$9(100) = 20(x)$

$900 = 20x$

$\frac{900}{20} = \frac{20x}{20}$

$45 = x$

OR

$45\% = x$

46. 32% written as a decimal

0.32

32% written as a fraction (simplified)

$\frac{32}{100} =$

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

2 | 32
2 | 16
2 | 8
2 | 4
2 | 2
1

2 | 100
2 | 50
5 | 25
5 | 5
1

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

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

$\frac{8}{25} =$

47. $A = P - PD$, $P = 430$, $D = 25\% = .25$

$A = \$430 - 430(.25)$

$A = \$430 - \$107.50$ ← discount

$A = \$322.50$ ← Sale price

48 $A = P + PRT$, $P = \$73{,}000$, $R = 7.5\% = .075$, $T = 6$

$A = \$73{,}000 + \$73{,}000(.075)(6)$

$A = \$73{,}000 + \$73000(.45)$

$A = \$73000 + \$32\,850$ interest paid on loan

$A = \$105{,}850$ total amount paid

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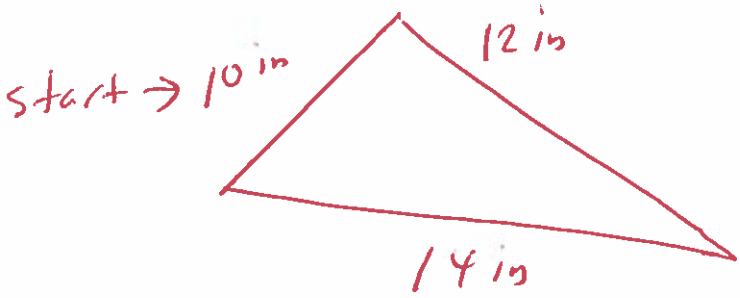
49 Find Perimeter



$P = 10 + 12 + 14$

$P = 36$ inches

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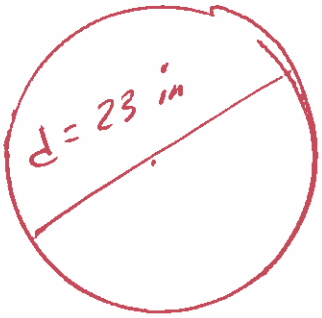
50. find area



$A = \pi r^2$ $\quad r = 11.5$ in

$A = \pi (11.5)^2$

$A = \pi (11.5)(11.5)$

$A = \pi (132.25)$

$A = 132.25\pi$ Exact area square inches

$r = \frac{1}{2} D = \frac{1}{2}(23) = \frac{23}{2}$

$= 11.5$

long division

$2 \overline{)23}$

22

1

$A = \pi r^2$, $\quad \pi = 3.14$, $\quad r = 11.5$

$A = 3.14 (11.5)^2$

$A = 3.14 (11.5)(11.5)$

$A = 3.14 (132.25)$

$A = 415.265$ approx area square inches

51. $C = \frac{5}{9}(F - 32^\circ)$ $F = 176$

$C = \frac{5}{9}(176^\circ - 32^\circ)$ PEMDAS

$C = \frac{5}{9}(144^\circ)$

$C = \frac{5}{9}(144^{16})$ divide

$C = 5(16^\circ)$

$C = 80^\circ$

52. $5(x - 9) + 4 = -41$ PEMDAS

$5x - 45 + 4 = -41$

$5x - 41 = -41$

$5x - 41 + 41 = -41 + 41$

$5x = 0$

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

$x = 0$

S3 $x + y = 6$ $y =$

$x + y - x = 6 - x$

$y = 6 - x$

OR

$y = -x + 6$

S4 $Q = R + R_s t$ $t =$

$Q - R = R + R_s t - R$

$Q - R = R_s t$

$\frac{Q - R}{R_s} = \frac{R_s t}{R_s}$

$\frac{Q - R}{R_s} = t$

55. $-9x \leq 45$

$\frac{-9x}{-9} \geq \frac{45}{-9}$ divide by a negative and turn alligator around

$x \geq -5$

$[-5, \infty)$

56. $-4x + 2 \geq 2(5 - x)$ PEMDAS

$-4x + 2 \geq 10 - 2x$

$-4x + 2 - x \geq 10 - 2x - 2$

$-4x \geq -2x + 8$

$-4x + 2x \geq -2x + 8 + 2x$

$-2x \geq 8$

$\frac{-2x}{-2} \leq \frac{8}{-2}$ divide by a negative and turn alligator around

$x \leq -4$

$(-\infty, -4]$

5) $y = -3x + 6$ graph

x	y
0	6
1	3
2	0

$y = -3(0) + 6$

$y = 0 + 6$

$y = 6$

$y = -3(1) + 6$

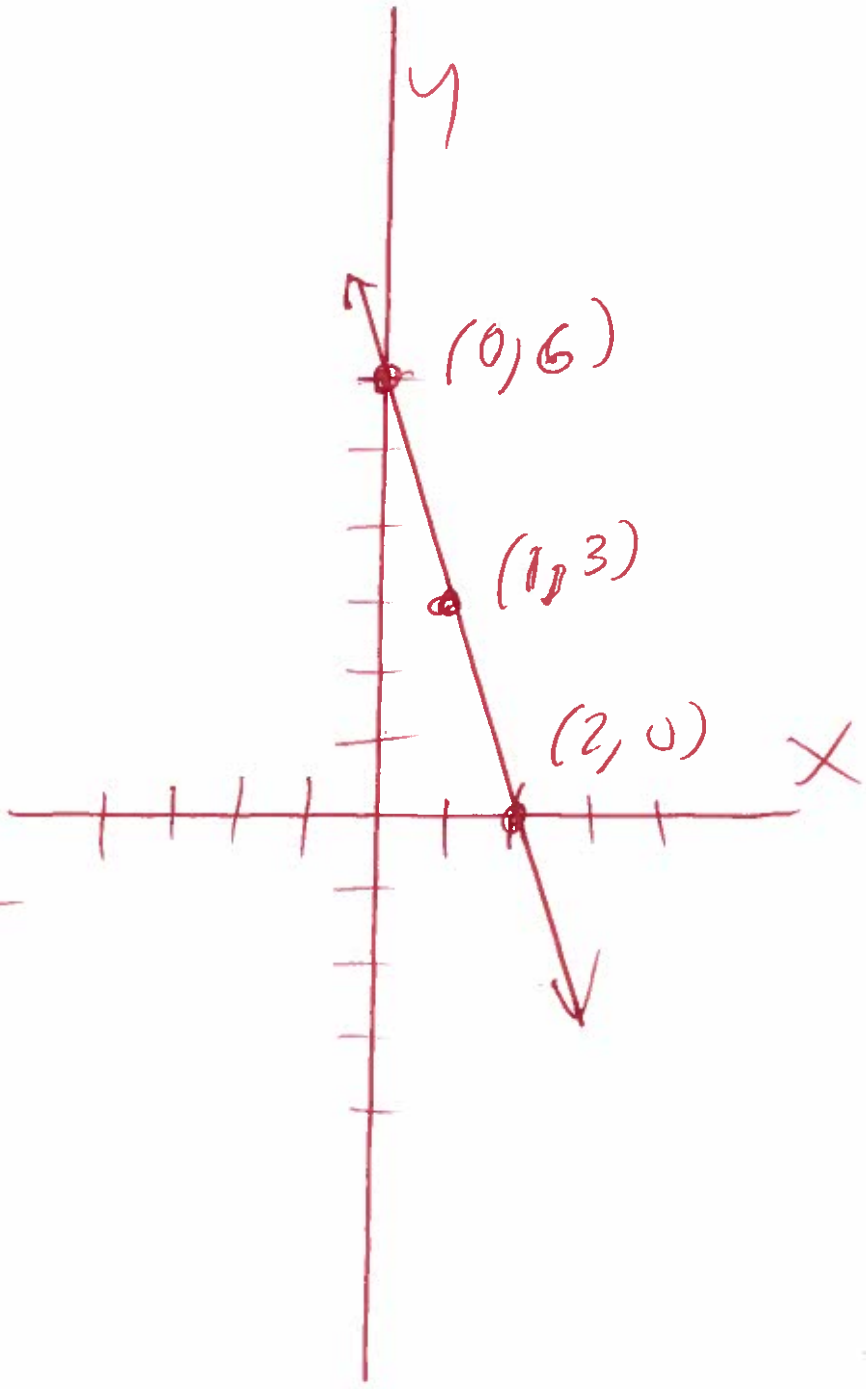
$y = -3 + 6$

$y = 3$

$y = -3(2) + 6$

$y = -6 + 6$

$y = 0$



5a

$x + y = 5$ graph

$x + y - x = 5 - x$

$y = 5 - x$

$y = -x + 5$

Write in $y = mx + b$ form

slope intercept form

x	y
0	5
1	4

$y = -(0) + 5$

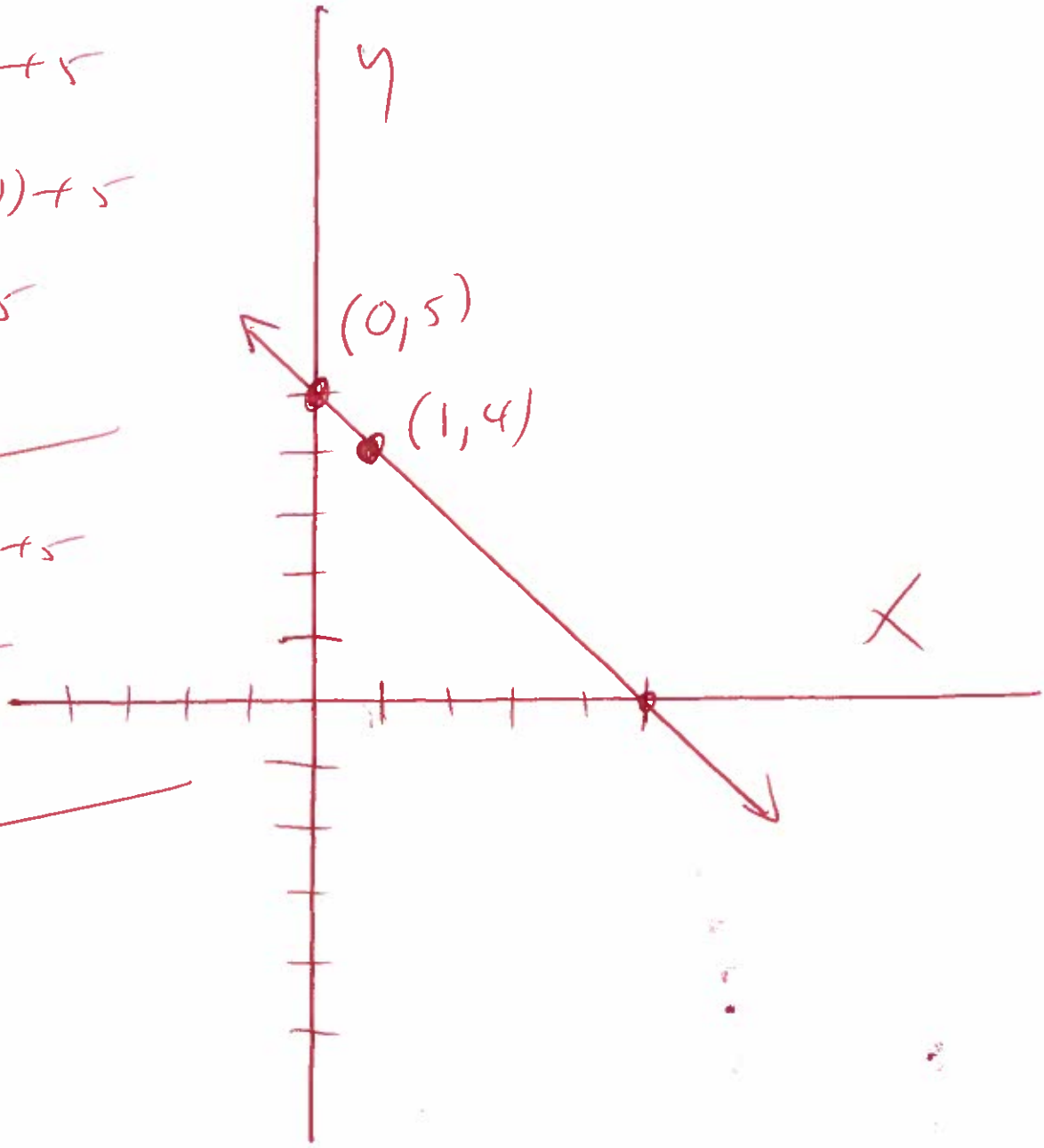
$y = 0 + 5$

$y = 5$

$y = -(1) + 5$

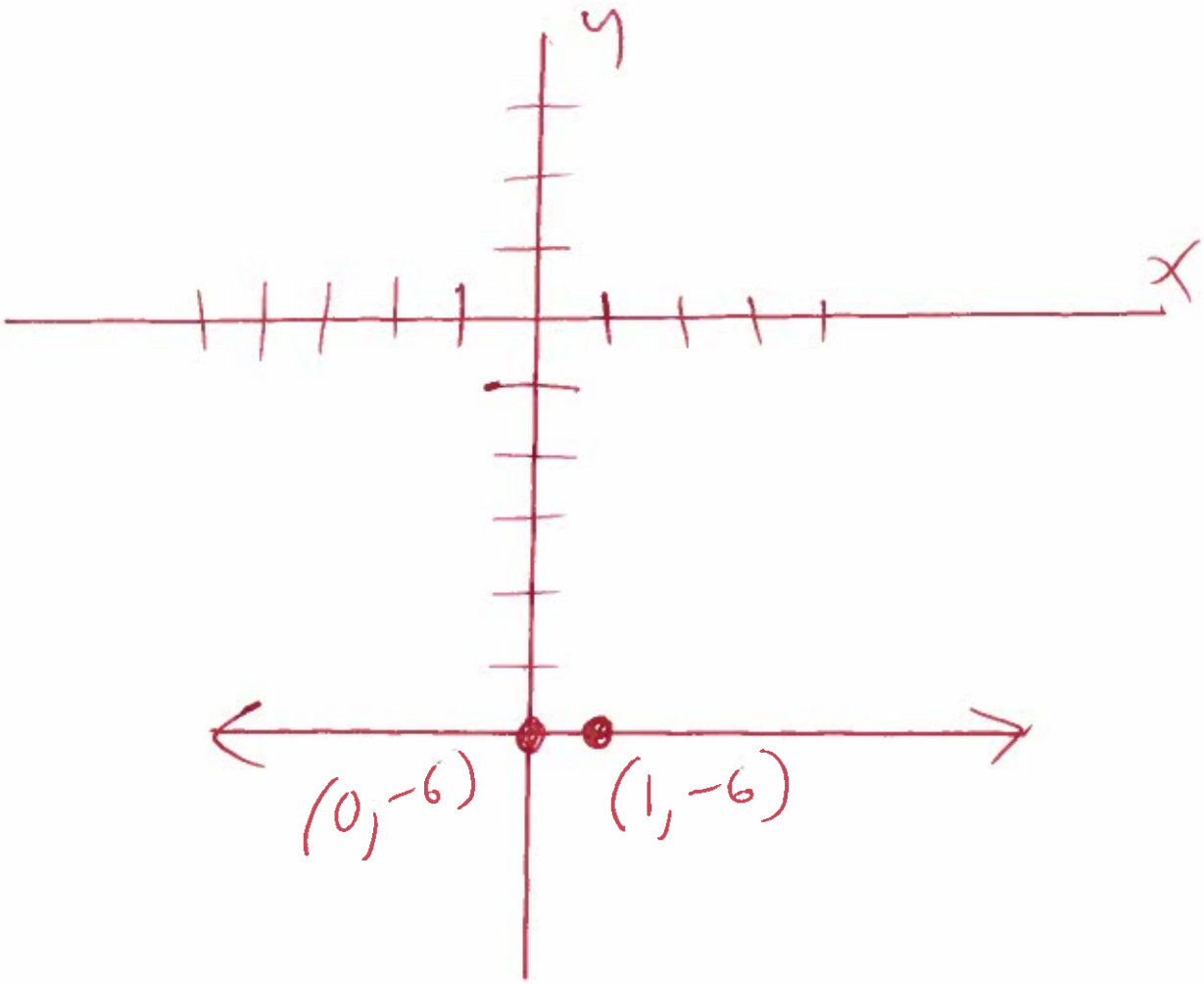
$y = -1 + 5$

$y = 4$



59) $y = -6$ Graph

x	y
0	-6
1	-6



60. $y = \frac{3}{2}x - 3$ Graph

x	y
0	-3
2	0

$y = \frac{3}{2}(0) - 3$

$y = 0 - 3$

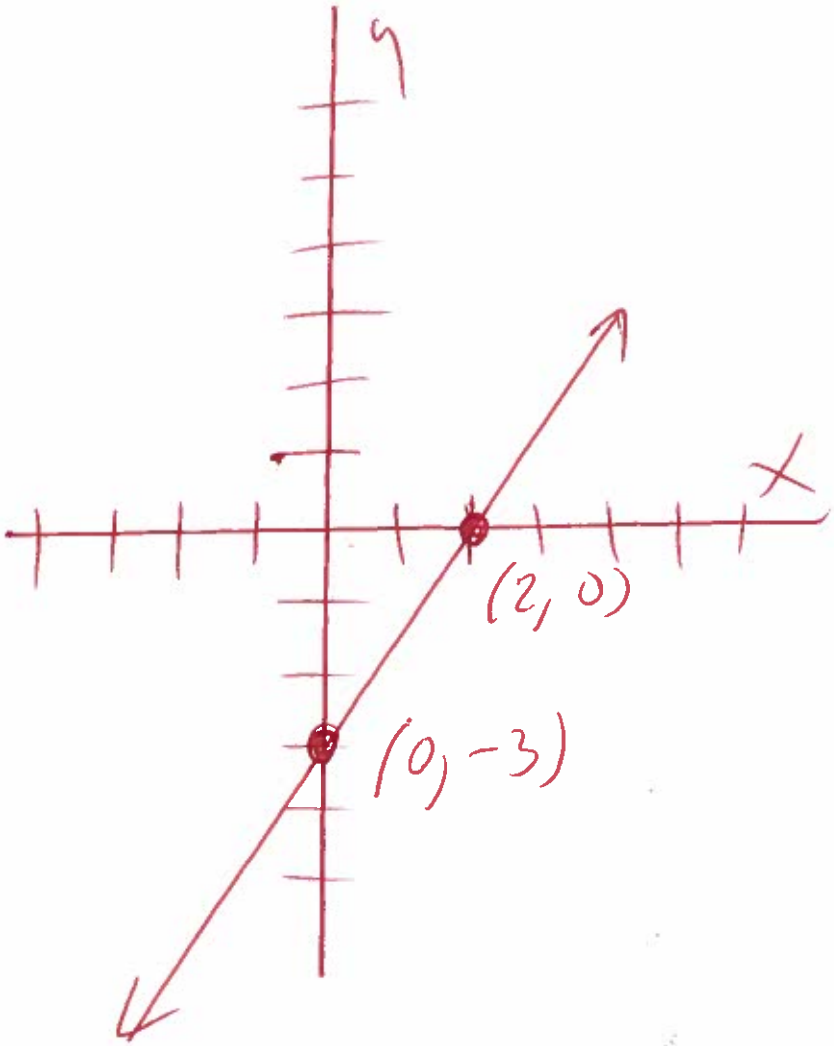
$y = -3$

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

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

$y = 3 - 3$

$y = 0$



(61) $4x - 8y = -8$ graph

Find x-intercept let $y = 0$

$4x - 8(0) = -8$

$4x - 0 = -8$

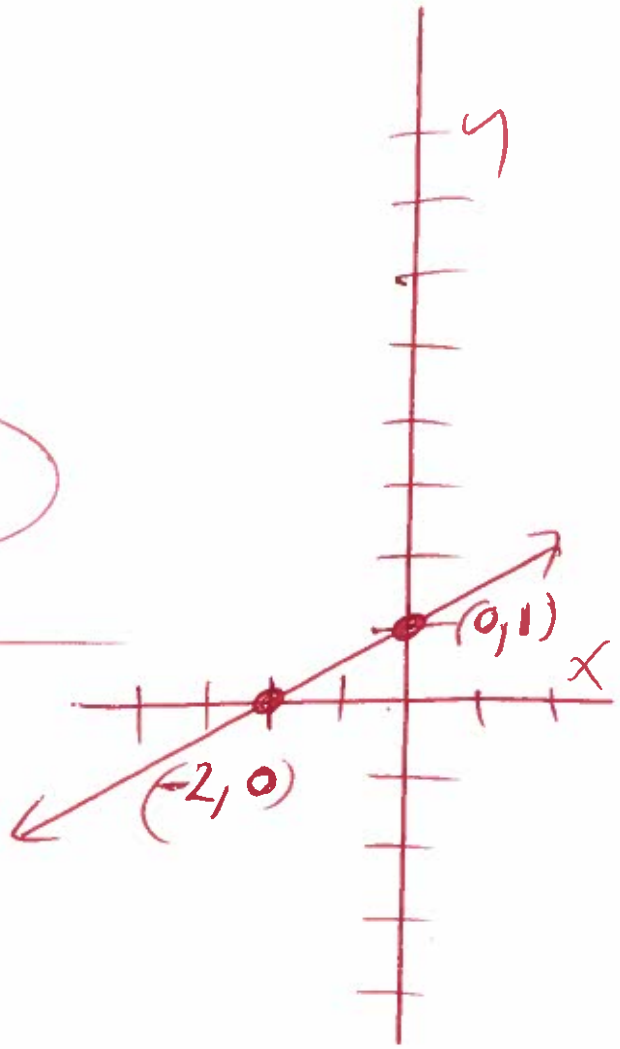
$4x = -8$

$\frac{4x}{4} = \frac{-8}{4}$

$x = -2$

x-intercept

$(-2, 0)$



Find y-intercept let $x = 0$

$4x - 8y = -8$

$4(0) - 8y = -8$

$0 - 8y = -8$

$-8y = -8$

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

$y = 1$

y intercept

$(0, 1)$

62. $(-1, 2)$ and $(8, 3)$ find slope

$x_1 \; y_1 \qquad x_2 \; y_2$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

$$m = \frac{(2) - (3)}{(-1) - (8)}$$

$$m = \frac{2 - 3}{-1 - 8}$$

$$m = \frac{-1}{-9}$$

$$m = \frac{1}{9}$$

63. $(8, 6)$ and $(2, 6)$ find slope

$x_1 \; y_1 \qquad x_2 \; y_2$

$$m = \frac{y_1 - y_2}{x_1 - x_2}$$

$$m = \frac{(6) - (6)}{(8) - (2)}$$

$$m = \frac{6 - 6}{8 - 2}$$

$$m = \frac{0}{6}$$

$$m = 0$$

64. $y = 2x - 3$ find slope

Slope $= m = 2$

y-intercept $= -3$

OR

$(0, -3)$

formula

$y = mx + b$

Slope $= m$ y-intercept $= b$

OR

$(0, b)$

65. $3x + y = 6$ find slope

$3x + y - 3x = 6 - 3x$

$y = 6 - 3x$

$y = -3x + 6$

Slope $= m = -3$

y-intercept $= 6$

OR

$(0, 6)$

formula

$y = mx + b$

Slope $= m$ y-intercept $= b$

OR

$(0, b)$

66 $4x - 5y = 20$ find slope

$-4x \quad -4x$

$-5y = 20 - 4x$

$\frac{-5y}{-5} = \frac{20}{-5} - \frac{4x}{-5}$

$y = -4 + \frac{4}{5}x$

$y = \frac{4}{5}x - 4$

slope $= m = \frac{4}{5}$ y-intercept $= -4$ OR $(0, -4)$

formula

$y = mx + b$

slope $= m$ y-intercept $= b$ OR $(0, b)$

67. slope $= m = 3$ point $(-3, 5)$ x_1, y_1

find equation of the line

$y - y_1 = m(x - x_1)$

$y - (5) = 3(x - (-3))$

$y - 5 = 3(x + 3)$

$y - 5 = 3x + 9$

$y - 5 + 5 = 3x + 5 + 5$

$y = 3x + 14$

68. $x^2 - 4x + 3$, $x = -3$

PEMDAS

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

$(-3)(-3) - 4(-3) + 3 =$

$9 + 12 + 3 =$

$21 + 3 =$

$24 =$

69. determin if $(5, 1)$ is a solution
x_1, y_1

$3x - y = 14$

$x + 5y = 26$

$3(5) - (1) = 14$

$15 - 1 = 14$

$14 = 14$ ✓ Good

$(5) + 5(1) = 26$

$5 + 5 \neq 26$

$10 \neq 26$ Not

NO

$(5, 1)$ is not a solution

Is $(6, 4)$ a solution

$3x - y = 14$

$x + 5y = 26$

$3(6) - (4) = 14$

$18 - 4 = 14$

$14 = 14$ ✓ Good

$(6) + 5(4) = 26$

$6 + 20 = 26$

$26 = 26$ Good

YES

$(6, 4)$ is a solution

70. $x+y=5$

$x=4y$

Sub

$(4y)+y=5$

$4y+1y=5$

$5y=5$

$\frac{5y}{5}=\frac{5}{5}$

$y=1$

Subst

$x+y=5$

$x+(1)=5$

$x+1=5$

$x+x-1=5-1$

$x=4$

$(x, y)=(4, 1)$

7) $y = 2x + 1$

$3y - 3x = 9$

Sub

PEMDAS

$3(2x+1) - 3x = 9$

$6x + 3 - 3x = 9$

$3x + 3 = 9$

$3x + 3 - 3 = 9 - 3$

$3x = 6$

$\frac{3x}{3} = \frac{6}{3}$

$x = 2$

Sub

$y = 2x + 1$

$y = 2(2) + 1$

$y = 4 + 1$

$y = 5$

$(x, y) = (2, 5)$

72) $x+3y=2$
$5x+5y=0$

$\begin{pmatrix} x+3y=2 \\ 5x+5y=0 \end{pmatrix}\begin{pmatrix} -5 \\ 3 \end{pmatrix}$ mult

$-5x-15y=-10$
$15x+15y=0$

$10x+0=-10$

$10x=-10$

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

$x=-1$

Sub

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

$(x,y)=(-1,1)$

73 $(-6p^3q^7)(7pq^2) =$

$(-6p^3q^7)(7p^1q^2) =$

$-42p^{3+1}q^{7+2}$ = add powers

$-42p^4q^9 =$

74 $(6z^{12})(-2z^6)(z^4) =$

$(6z^{12})(-2z^6)(1z^4) =$

$-12z^{12+6+4}$ = add powers

$-12z^{22} =$

75. $(y^5)^2 =$

$y^{(5)(2)}$ = Mult powers

$y^{10} =$

76 $(2c^8)^5 =$

$(2^1c^8)^5 =$

$2^{1(5)}c^{8(5)} =$ Mult powers

$2^5c^{40} =$

$(2)(2)(2)(2)(2)c^{40} =$

$32c^{40} =$

77 $(-6a^5b^4c)^2 =$

$((-6)^1a^5b^4c^1)^2 =$

$(-6)^{1(2)}a^{5(2)}b^{4(2)}c^{1(2)} =$ Mult powers

$(-6)^2a^{10}b^8c^2 =$

$(-6)(-6)a^{10}b^8c^2 =$

$36a^{10}b^8c^2 =$

78 $\left(\frac{6x^2z^3}{y^4}\right)^2 =$

$\left(\frac{(6)^1 x^2 z^3}{y^4}\right)^2 =$

$\frac{(6)^{1(2)} x^{2(2)} z^{3(2)}}{y^{4(2)}} =$ mult powers

$\frac{(6)^2 x^4 z^6}{y^8} =$

$\frac{(6)(6) x^4 z^6}{y^8} =$

$\frac{36x^4z^6}{y^8}$

79

$a^2 a^4 a^5 =$

$a^{2+4+5} =$ add powers

$a^{11} =$

80.

$$\frac{3x^3y^2z}{xyz} =$$

$$\frac{3x^3y^2z^1}{x^1y^1z^1} =$$

$$\frac{3x^3y^2}{x^1y^1} =$$

$3x^{3-1}y^{2-1} =$ subtract powers

$3x^2y^1 =$

$3x^2y =$

81. $P(x) = x^2 + x + 1$ $P(6)$

$P(6) = (6)^2 + (6) + 1$

$P(6) = (6)(6) + (6) + 1$ PEMDAS

$P(6) = 36 + 6 + 1$

$P(6) = 42 + 1$

$P(6) = 43$

82. $-6a^2 - 6ab + 3b^2 - 2a^2 - 9ab + 2b^2 =$

$-8a^2 - 15ab + 5b^2 =$

83. $(9y^2 + 6y - 5) - (-3y + 6) =$ PEMDAS

$9y^2 + 6y - 5 + 3y - 6 =$

$9y^2 + 9y - 11 =$

84. $(-6y^2 - 8y) + (2y^2 + y - 9) =$ PEMDAS

$-6y^2 - 8y + 2y^2 + y - 9 =$

$-4y^2 - 7y - 9 =$

85. $(x+6)(x^3-5x+3)$

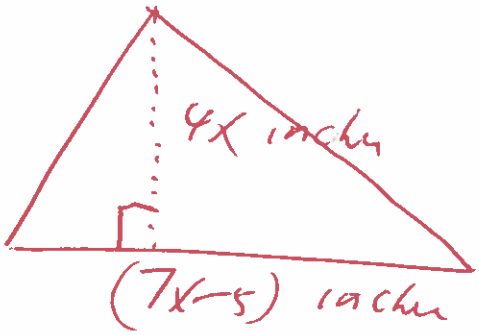
$x^4-5x^2+3x+6x^3-30x+18=$

$x^4+6x^3-5x^2-27x+18=$

86. $-3x(x^2+5x-8)=$

$-3x^3-15x^2+24x=$

87. find area



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

$A=\frac{1}{2}(7x-5)(4x)$

$A=\frac{1}{2}(28x^2-20x)$

$A=\frac{1}{2}(28x^2)-\frac{1}{2}(20x)$

$A=14x^2-10x$ square inches

88 $6(y-6)(2y-1) =$

$6(2y^2 - 1y - 12y + 6) =$

$6(2y^2 - 13y + 6) =$

$12y^2 - 78y + 36 =$

89 $(a-7)(a+7) =$

$a^2 + 7a - 7a - 49 =$

$a^2 - 49 =$

90 $3x^4(7x^3 - 2x + 9) =$

$21x^7 - 6x^5 + 27x^4 =$

91 $(3b-5c)^2 =$

$(3b-5c)(3b-5c) =$ rewrite

$9b^2 - 15bc - 15bc + 25c^2 =$

$9b^2 - 30bc + 25c^2 =$

92) $6^{-3} =$

$\frac{1}{6^3} =$ rewrite

$\frac{1}{(6)(6)(6)} =$

$\frac{1}{216} =$

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

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

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

$3^{-1(-5)} =$ Multiply

$3^5 =$

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

$243 =$

94 $\dfrac{y^{-1}}{y^{-8}} =$

$\dfrac{y^{8}}{y^{1}} =$ rewrite

$y^{8-1} =$ subtract powers

$y^{7} =$

---

95 $(-4x^{5}y^{-5})(2x^{-2}y^{3}) =$

$-8x^{5-2}y^{-5+3} =$ put powers together

$-8x^{3}y^{-2} =$

$\dfrac{-8x^{3}}{y^{2}} =$ rewrite

96) $(a^{-7}b^{9})^{-3} =$

$a^{-7(-3)}\,b^{9(-3)}$ = Mult Powers

$a^{21}\,b^{-27} =$

$\frac{a^{21}}{b^{27}} =$ Rewrite

97) Write the number in Scientific Notation

$52{,}000 =$

$5.2 \times 10^{4} =$

98) Write the number in Scientific Notation

$0.00000111 =$

$1.11 \times 10^{-6} =$

99 $\frac{10p^7 + 8p^8}{2p}$

$\frac{10p^9}{2p^1} + \frac{8p^8}{2p^1}$ = rewrite

$5p^{9-1} + 4p^{8-1}$ = Subtract powers

$5p^8 + 4p^7 =$

100. 16, 40 Find GCF Prime 2, 3, 5, 7...

2 | 16 — 2 | 40
2 | 8 — 2 | 20
2 | 4 — 2 | 10
2 | 2 — 5 | 5
1

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

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

GCF $= 2 \cdot 2 \cdot 2$

$= 8$

101 $6x + 18$ = factor GCF

$6(x+3) =$

102 $32xy - 54x^2 =$ factor GCF

$2x(16y - 27x) =$

103 $-48x^5y^5 - 18x^6y^3 =$ factor GCF

$6x^5y^3(-8y^2 - 3x) =$

104. $x^2 - 7x - 18 =$

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

18.1
9.2
6.3
possible

Ck

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

$x^2 - 9x + 2x - 18 =$

$x^2 - 7x - 18 =$ Good

105. $144x^2 - 121y^2 =$

$(12x)^2 - (11y)^2 =$

$(12x+11y)(12x-11y) =$

formula

$a^2 - b^2$

$(a+b)(a-b) =$

106. $(x-2)(x+5) = 0$

set $x-2=0$ OR $x+5=0$

$x-2+2=0+2$ OR $x+5-5=0-5$

$x=2$ OR $x=-5$

107. $8x(x-9) = 0$

set $8x=0$ OR $x-9=0$

$\frac{8x}{8} = \frac{0}{8}$ OR $x-9+9=0+9$

$x=0$ OR $x=9$

108 $(8x+9)(3x-7)=0$

Set $8x+9=0$ or $3x-7=0$

$8x+9-9=0-9$ OR $3x-7+7=0+7$

$8x=-9$ or $3x=7$

$\frac{8x}{8}=\frac{-9}{8}$ or $\frac{3x}{3}=\frac{7}{3}$

$x=\frac{-9}{8}$ or $x=\frac{7}{3}$

Possible

16.1

8.2

4.4

109. $x^2-10x+16=0$

$(x-2)(x-8)=0$

Set $x-2=0$ or $x-8=0$

$x-2+2=0+2$ OR $x-8+8=0+8$

$x=2$ or $x=8$

110 $x^2 + 3x - 18 = 0$

18-1 Possibly
9.2
6'3

$(x-3)(x+6) = 0$

ZPA $x - 3 = 0$ OR $x + 6 = 0$

$x - 3 + 3 = 0 + 3$ OR $x + 6 - 6 = 0 - 6$

$x = 3$ OR $x = -6$

---

111. $(x-2)(x+6) = 5x$

$x^2 + 6x - 2x - 12 = 5x$

$x^2 + 4x - 12 = 5x$

$x^2 + 4x - 12 - 5x = 0$

$x^2 - x - 12 = 0$

Possible
12.1
6.2
3.4

$(x+3)(x-4) = 0$

ZPA $x + 3 = 0$ OR $x - 4 = 0$

$x + 3 - 3 = 0 - 3$ OR $x - 4 + 4 = 0 + 4$

$x = -3$ OR $x = 4$

112. $x^3 - 10x^2 + 16x = 0$

16.1 Possible
8.2
4 4

$x(x^2 - 10x + 16) = 0$

$x(x-2)(x-8) = 0$

$x = 0$ or $x - 2 = 0$ or $x - 8 = 0$

$x = 0$ or $x - 2 + 2 = 0 + 2$ or $x - 8 + 8 = 0 + 8$

$x = 2$ or $x = 8$

113. Find domain (division by zero is allowed in domain Not)

$$R(x) = \frac{7 - 9x}{x^3 - 6x^2 - 7x}$$

7.1 Possible

$x^3 - 6x^2 - 7x = 0$

$x(x^2 - 6x - 7) = 0$

$x(x+1)(x-7) = 0$

$x = 0$ or $x + 1 = 0$ or $x - 7 = 0$

$x = 0$ or $x + 1 - 1 = 0 - 1$ or $x - 7 + 7 = 0 + 7$

$x = -1$ or $x = 7$

domain $\{x \mid x \text{ is a real number } x \neq 0, -1, 7\}$

114)

$$\frac{x+4}{x^2-4x-32}$$

$$\frac{(x+4)}{(x+4)(x-8)} =$$

$$\frac{1(x+4)}{(x+4)(x-8)} =$$

$$\frac{1}{x-8} =$$

32.1
16.2
4.8
Possible

115)

$$\frac{x^2-49}{x^2-2x-35} \cdot \frac{x+5}{x} =$$

$$\frac{(x)^2-(7)^2}{x^2-2x-35} \cdot \frac{x+5}{x} =$$

$$\frac{(x+7)(x-7)}{(x+5)(x-7)} \cdot \frac{(x+5)}{(x)} =$$

$$\frac{(x+7)(x-7)}{(x+5)(x-7)} \cdot \frac{(x+5)}{(x)} =$$

$$\frac{x+7}{x} =$$

Formula
a^2-b^2
$(a+b)(a-b)$

Possi
35.1
5.7

(16) $\frac{8m}{3n} + \frac{7m}{3n} =$

$\frac{8m+7m}{3n} =$

$\frac{15m}{3n} =$

$\frac{(3)(5)m}{(3)n} =$

$\frac{5m}{n} =$

Prime 2, 3, 5, 7.

3 | 15

5 | 5

1

(17) $\frac{12x-11}{x^2-7x-18} - \frac{11x-2}{x^2-7x-18} =$

$\frac{(12x-11)-(11x-2)}{x^2-7x-18} =$

$\frac{12x-11-11x+2}{x^2-7x-18} =$

Possible

18, 1

9, 2

6, 3

$\frac{x-9}{x^2-7x-18} =$

$\frac{(x-9)}{(x+2)(x-9)} =$

$\frac{1(x-9)}{(x+2)(x-9)} =$

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

118. $7 - \frac{6}{b} = 9$

$-7 \quad\quad -7$

$-\frac{6}{b} = 9 - 7$

$-\frac{6}{b} = 2$

$-\frac{6}{b} = \frac{2}{1}$

$-6(1) = 2(b)$ Cross Mult

$-6 = 2b$

$\frac{-6}{2} = \frac{2b}{2}$

$-3 = b$

119. $\frac{w-4}{3} = \frac{w}{5}$

$5(w-4) = 3(w)$ Cross Mult

$5w - 20 = 3w$

$5w - 20 + 20 = 3w + 20$

$5w = 3w + 20$

$5w - 3w = 3w + 20 - 3w$

$2w = 20$

$\frac{2w}{2} = \frac{20}{2}$

$w = 10$

(20) $\frac{5}{4y-9} = -5$

$\frac{5}{4y-9} = \frac{-5}{1}$ rewrite

$5(1) = -5(4y-9)$ Cross mult

$5 = -20y + 45$

$5 - 45 = -20y + 45 - 45$

$-40 = -20y$

$\frac{-40}{-20} = \frac{-20y}{-20}$

$2 = y$

(21.) $\frac{4}{y} + \frac{2}{3} = \frac{4}{3y}$ LCD = $3y$

$\frac{4}{y}(3y) + \frac{2}{3}(3y) = \frac{4}{3y}(3y)$ Mult by LCD

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

$12 + 2y = 4$

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

$2y = -8$

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

$y = -4$

122 $\sqrt{100x^6} =$

$\sqrt{10^2x^6} =$

$10^{2/2}x^{6/2} =$ divide powers

$10^1x^3 =$

$10x^3 =$

Primes 2, 3, 5, 7...

2 | 100
2 | 50
5 | 25
5 | 5
1

$10 \cdot 10 = 100$

$10^2 = 100$

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

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

$2^{3/3} =$

$2^1 =$

$2 =$

2 | 8
2 | 4
2 | 2
1

$2^3 =$

$8 = 2 \cdot 2 \cdot 2$

124. $\sqrt{\frac{16}{25}} =$

$\frac{\sqrt{16}}{\sqrt{25}} =$ rewrite

$\frac{4}{5} =$

12s $f(x) = \sqrt{x-6}$ graph

x	f(x)
6	0
7	1
15	3
22	4

$f(6) = \sqrt{6-6}$

$f(6) = \sqrt{0}$

$f(6) = 0$

$f(7) = \sqrt{7-6}$

$f(7) = \sqrt{1}$

$f(7) = 1$

$f(15) = \sqrt{15-6}$

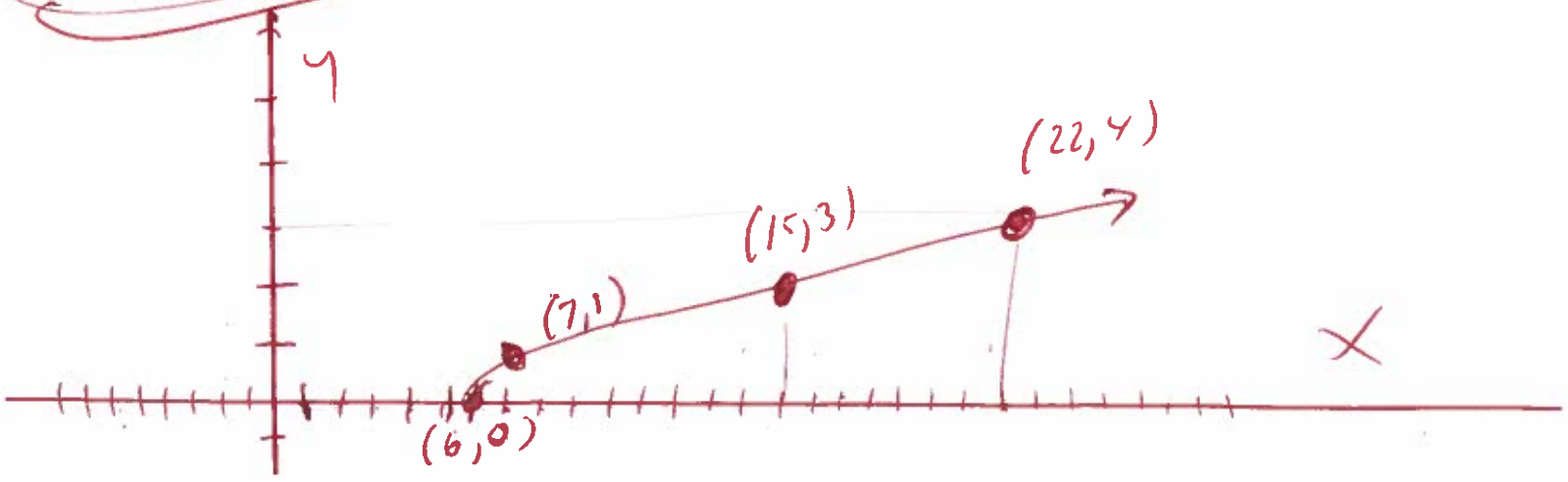
$f(15) = \sqrt{9}$

$f(15) = 3$

$f(22) = \sqrt{22-6}$

$f(22) = \sqrt{16}$

$f(22) = 4$



126

$\left(\frac{1}{256}\right)^{1/4} =$

Prime 2, 3, 5, 7...

$\left(\frac{1}{2^8}\right)^{1/4} =$ rewrite

$\left(2^{-8}\right)^{1/4} =$

$2^{-\frac{8}{1}\left(\frac{1}{4}\right)} =$ Mult pwr

$2^{-\frac{8}{4}} =$

$2^{-2} =$

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

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

$\frac{1}{4} =$

2 | 256
2 | 128
2 | 64
2 | 32
2 | 16
2 | 8
2 | 4
2 | 2
1

(27) $256^{\frac{5}{4}} =$

Primes 2, 3, 5, 7

$(2^8)^{\frac{5}{4}} =$ Power

$2^{8(\frac{5}{4})} =$

$2^{\frac{40}{4}} =$ Multiply Powers

$2^{10} =$ Solve

2 | 256
2 | 128
2 | 64
2 | 32
2 | 16
2 | 8
2 | 4
2 | 2
1

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

$1024 =$

(28) $\sqrt{175} =$

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

5 | 175
5 | 35
7 | 7
1

$\sqrt{25 \cdot 7} =$

$\sqrt{25}\sqrt{7} =$

$5\sqrt{7}$

129 $\sqrt{x-7} = 4$

$(\sqrt{x-7})^2 = (4)^2$

$x - 7 = 16$

$x - 7 + 7 = 16 + 7$

$x = 23$

Ck

$\sqrt{x-7} = 4$

$\sqrt{23-7} = 4$

$\sqrt{16} = 4$

$4 = 4$ ✓ Good

(130) $\sqrt{x+4} = \sqrt{2x-5}$

$(\sqrt{x+4})^2 = (\sqrt{2x-5})^2$

$x+4 = 2x-5$

$x+4-4 = 2x-5-4$

$x = 2x-9$

$1x - 2x = 2x - 9 - 2x$

$-1x = -9$

$\frac{-1x}{-1} = \frac{-9}{-1}$

$x = 9$

Ck

$\sqrt{x+4} = \sqrt{2x-5}$

$\sqrt{9+4} = \sqrt{2(9)-5}$

$\sqrt{13} = \sqrt{18-5}$

$\sqrt{13} = \sqrt{13}$ ✓

Good

(131) $(x+4)^2 = 9$

$\sqrt{(x+4)^2} = \pm\sqrt{9}$

$x+4 = \pm 3$

$x+4 = -3$ OR $x+4 = 3$

$x+4-4 = -3-4$ OR $x+4-4 = 3-4$

$x = -7$ OR $x = -1$

Ck

$(x+4)^2 = 9$

$(-7+4)^2 = 9$

$(-3)^2 = 9$

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

$9 = 9$ ✓ Good

$(x+4)^2 = 9$

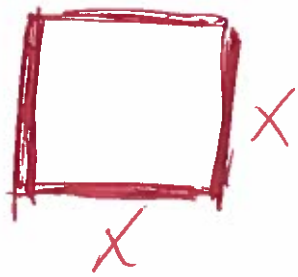
$(-1+4)^2 = 9$

$(3)^2 = 9$

$(3)(3) = 9$

$9 = 9$ ✓ Good

132



If area of square is 144 find X.

$A = LW$

$144 = (X)(X)$

$144 = X^2$

$\sqrt{144} = \sqrt{X^2}$

$12 = X$

Ck

$A = LW$

$A = X \cdot X$

$A = (12)(12)$

$A = 144$

Good

133. $m^2 - 9m + 18 = 0$

18.1 9.2 6.3 Possible

$(m-3)(m-6) = 0$

Let $m-3=0$ OR $m-6=0$

$m-3+3=0+3$ OR $m-6+6=0+6$

$m=3$ OR $m=6$

OR use Quadratic formula

$1m^2 - 9m + 18 = 0$

$a=1,\ b=-9,\ c=18$

$$m = \frac{-b \pm \sqrt{b^2-4ac}}{2a}$$

$$m = \frac{-(-9) \pm \sqrt{(-9)^2-4(1)(18)}}{2(1)}$$

$$m = \frac{9 \pm \sqrt{81-72}}{2}$$

$$m = \frac{9 \pm \sqrt{9}}{2}$$

$$m = \frac{9 \pm 3}{2}$$

$m = \frac{9-3}{2}$ OR $m = \frac{9+3}{2}$

$m = \frac{6}{2}$ OR $m = \frac{12}{2}$

$m=3$ OR $m=6$

(134) $-2y = 4y^2 - 6$

$0 = 4y^2 - 6 + 2y$

$0 = 4y^2 + 2y - 6$

$0 = 2(2y^2 + y - 3)$

$0 = 2(2y+3)(y-1)$

Possible (2·1) (1·1)

~~or~~ $2 = 0$ or $2y+3=0$ or $y-1=0$

$2y+3-3=0-3$ or $y-1+1=0+1$

$2y = -3$ or $y = 1$

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

$y = -3/2$

or ~~Use Quad form~~

$4y^2 + 2y - 6 = 0$

$a=4,\ b=2,\ c=-6$

$y = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$y = \frac{-(2) \pm \sqrt{(2)^2 - 4(4)(-6)}}{2(4)}$

$y = \frac{-2 \pm \sqrt{4 + 96}}{8}$

$y = \frac{-2 \pm \sqrt{100}}{8}$

$y = \frac{-2 \pm 10}{8}$

$y = \frac{-2-10}{8}$ or $y = \frac{-2+10}{8}$

$y = \frac{-12}{8}$ or $y = \frac{8}{8}$

$y = \frac{4(-3)}{4(2)}$ $y = \frac{8}{8}$

$y = \frac{-3}{2}$ or $y = 1$

135 $1x^2+6x+18=0$

$a=1,\ b=6,\ c=18$

$$x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$$

$$x=\frac{-(6)\pm\sqrt{(6)^2-4(1)(18)}}{2(1)}$$

$$x=\frac{-6\pm\sqrt{36-72}}{2}$$

$$x=\frac{-6\pm\sqrt{-36}}{2}$$

$$x=\frac{-6\pm 6i}{2}$$

$$x=-3\pm 3i$$

$x=-3-3i$ o $x=-3+3i$

formula

$\sqrt{-1}=i$

$\sqrt{-4}=2i$

$\sqrt{-9}=3i$

$\sqrt{-16}=4i$