

1) Find $f(2)$ if $f(x) = 8000(1.04)^x$

(a) $f(2) = 8152.60$ (b) $f(2) = 8442.90$

(c) $f(2) = 8652.80$ (d) $f(2) = 8452.80$

2) Find C if $C = \frac{5}{9}(F - 32)$, $F = 86$

(a) $C = 10$

(b) $C = 20$

(c) $C = 30$

(d) $C = 40$

3) Find y if $y = 2x^2 - 4x - 6$, $x = -2$

(a) $y = 40$

(b) $y = 20$

(c) $y = 10$

(d) $y = 12$

4) Evaluate $(x+3)(x+4)$ if $x = -4$

(a) 12

(b) 4

(c) 0

(d) -4

5) Find P if $P = 2(L + w)$, $L = 6$, $w = 2$

(a) $P = 18$

(b) $P = 10$

(c) $P = 16$

(d) $P = 12$

6) Find $f(4)$ if $f(x) = \frac{x+18}{x-3}$

(a) $f(4) = 10$

(b) $f(4) = 30$

(c) $f(4) = 22$

(d) $f(4) = 28$

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7. Find C if $C = P + .05P$, $P = 30$

(a) $C = 40.60$

(b) $C = 43.50$

(c) $C = 31.50$

(d) $C = 33.50$

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8. Find $h(2)$ if $h(x) = -16x^2 + 32x$

(a) $h(2) = 32$

(b) $h(2) = 12$

(c) $h(2) = 0$

(d) $h(2) = 10$

9. Find y if $y = 36.95X + 0.10m$, $X = 5$, $m = 200$

(a) $y = 199.55$

(b) $y = 166.55$

(c) $y = 179.75$

(d) $y = 189.75$

10. Find $Pr - r$ if $P = -9$, $r = \frac{1}{2}$

(a) -6

(b) 6

(c) -5

(d) 5

11. Find y if $y = \sqrt{x+1} + 8$, $x = 0$

(a) $y = 2$

(b) $y = 7$

(c) $y = 9$

(d) $y = 4$

12. Find $g(2)$ if $g(x) = \frac{x}{1-x}$

(a) $g(2) = 0$

(b) $g(2) = -4$

(c) $g(2) = -2$

(d) $g(2) = 2$

13. Find $f(-3)$ if $f(x) = |x-2|$

(a) $f(-3) = 9$

(b) $f(-3) = 0$

(c) $f(-3) = 5$

(d) $f(-3) = 8$

14. Find $f(-1)$ if $f(x) = 4x^2$

(a) $f(-1) = -1$

(b) $f(-1) = -4$

(c) $f(-1) = 4$

(d) $f(-1) = 8$

15. Find $f(-1)$ if $f(x) = \frac{x-1}{x^2-9}$

(a) $f(-1) = -4$

(b) $f(-1) = 3$

(c) $f(-1) = \frac{1}{4}$

(d) $f(-1) = \frac{1}{3}$

16. Find $f(1)$ if $f(x) = (x-1)^2 + 8$

(a) $f(1) = 4$

(b) $f(1) = 12$

(c) $f(1) = 8$

(d) $f(1) = 10$

17. Find 5^{-2}

(a) -10

(b) -25

(c) $\frac{1}{25}$

(d) $-\frac{1}{25}$

18. Find A if $A = \pi r^2$, $\pi = 3.14$, $r = 4$

(a) $A = 80.24$

(b) $A = 70.24$

(c) $A = 50.24$

(d) $A = 60.24$

19 Find $x-y$ if $x = \frac{1}{4}$, $y = -x$

(a) $\frac{1}{3}$

(b) $-\frac{1}{3}$

(c) $\frac{1}{2}$

(d) $-\frac{1}{2}$

20 Find the average of
2800, 1800, 1000, 1400, 2300.

(a) 1460

(b) 1760

(c) 1860

(d) 1960

21 Solve $4x+1=10$

(a) $x = -\frac{9}{4}$

(b) $x = \frac{1}{4}$

(c) $x = \frac{9}{4}$

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

22 Solve $1 + \frac{6}{x} = -23$

(a) $x = \frac{1}{8}$

(b) $x = \frac{1}{3}$

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

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

23 Find y if $3x+2y=90$, $x=10$

(a) $y = 40$

(b) $y = 20$

(c) $y = 30$

(d) $y = 10$

24 Solve $\frac{3}{2}x + 1 = 5$

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

(b) $x = \frac{2}{3}$

(c) $x = \frac{8}{3}$

(d) $x = \frac{1}{3}$

25) Solve $7x - 2 = 5 + 3x$

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

(b) $x = 4$

(c) $x = \frac{7}{4}$

(d) $x = \frac{1}{4}$

26) Solve $6x + 12 = 2x$

(a) $x = 5$

(b) $x = 4$

(c) $x = -3$

(d) $x = 3$

27) Find C if $k = C + 294$, $k = 10$

(a) $C = 204$

(b) $C = 104$

(c) $C = -284$

(d) $C = 284$

28) Solve $8 - x = 2(x - 8)$

(a) $x = 6$

(b) $x = 3$

(c) $x = 8$

(d) $x = 4$

29) Solve $\frac{x}{9} = \frac{x+1}{10}$

(a) $x = 0$

(b) $x = 1$

(c) $x = 9$

(d) $x = 4$

30) If $2x + 1 = 4$ find $12x$

(a) 10

(b) 12

(c) 18

(d) 16



31. Solve $3 = \frac{12-x}{x}$

(a) $x=1$

(b) $x=6$

(c) $x=3$

(d) $x=4$

32. Find a if $ax-25=x+2$, $x=3$

(a) $a=3$

(b) $a=4$

(c) $a=10$

(d) $a=2$

33. Solve $6(x-2)-20=2x$

(a) $x=0$

(b) $x=3$

(c) $x=8$

(d) $x=9$

34. Solve $5x=12+2x$

(a) $x=1$

(b) $x=2$

(c) $x=4$

(d) $x=9$

35. Solve $x-8=3x-8$

(a) $x=1$

(b) $x=3$

(c) $x=0$

(d) $x=2$

36. Solve $x-8=8-x$

(a) $x=3$

(b) $x=7$

(c) $x=8$

(d) $x=4$

37. Solve $3(x) = 2(x+8)$

(a) $x = 2$

(b) $x = 18$

(c) $x = 16$

(d) $x = 17$



38. Solve $\frac{2}{5x} + \frac{1}{x} = 14$

(a) $x = 5$

(b) $x = 3$

(c) $x = \frac{1}{10}$

(d) $x = \frac{3}{10}$

39. If $2x+1=4$ find $x+2$

(a) 2

(b) 3

(c) $\frac{7}{2}$

(d) $\frac{3}{2}$

40. If $4x-1=x$ find $30x$

(a) 40

(b) 12

(c) 10

(d) 11

41. Solve $-2x < 8$

(a) $x > 4$

(b) $x < 4$

(c) $x > -4$

(d) $x < -4$

42. Solve $2x < -6$

(a) $x > 2$

(b) $x < 2$

(c) $x < -3$

(d) $x > -3$

43. Solve $\frac{x}{4} + \frac{3x}{8} > 20$

(a) $x < 8$

(b) $x > -32$

(c) $x > 32$

(d) $x < 32$

44. If $xy = k$ and $x = 2$ when $y = 10$ then find x when $y = 5$.

(a) $x = 3$

(b) $x = 1$

(c) $x = 4$

(d) $x = 2$

45. Simplify $\left(\frac{12}{x}\right)^2$

(a) $144x^2$

(b) $12x^2$

(c) $\frac{144}{x^2}$

(d) $\frac{12}{x^2}$

46. Simplify $\left(\frac{5}{x}\right)^3$

(a) $25x^3$

(b) $\frac{5}{x^3}$

(c) $\frac{125}{x^3}$

(d) $\frac{25}{x^3}$

47. Simplify $\left(\frac{6k}{2}\right)^2$

(a) $36k^2$

(b) $3k^2$

(c) $9k^2$

(d) $9k$

48. Simplify $p - 0.12p$

(a) $0.08p$

(b) $0.90p$

(c) $0.88p$

(d) $0.80p$

49) Simplify $(3x-2)(x+5)$

(a) $3x^2+13x+10$ (b) $3x^2-13x-10$

(c) $3x^2+13x-10$ (d) $3x^2-13x+10$

50) Simplify $(2a-b)(2a+b)$

(a) $4a^2+4ab-b^2$ (b) $4a^2-4ab-b^2$

(c) $4a^2-b^2$ (d) $4a^2+b^2$

51) Simplify $(2a-b)^2$

(a) $4a^2+4ab+b^2$

(b) $4a^2-b^2$

(c) $4a^2-4ab+b^2$

(d) $4a^2+b^2$

52) Simplify $4a^2(ab^2+b^2)$

(a) $4a^3b^2-4a^2b^2$

(b) $a^3b^2+4a^2b^2$

(c) $4a^3b^2+4a^2b^2$

(d) $4a^3b^2+a^2b^2$

53) $(2xy^2)(4x^3y^4)$

(a) $10xy^6$

(b) $2x^4y^6$

(c) $8x^4y^6$

(d) $4x^4y^6$

54) $(2xy^4)^2$

(a) $8x^2y^6$

(b) $16x^2y^8$

(c) $4x^2y^8$

(d) $2xy^8$

55. $(3+ax)(2x-1)$

(a) $-6x+3+2ax^2+ax$

(b) $6x+3+2ax^2+ax$

(c) $6x-3+2ax^2-ax$

(d) $6x-3-2ax^2-ax$

56. Find V if $V=\pi r^2 h$, $r=3a$, $h=2a+3$

(a) $V=9\pi a^3+7\pi a^2$

(b) $V=18\pi a-27\pi a^2$

(c) $V=18\pi a^3+27\pi a^2$

(d) $V=18\pi a^2+27\pi a^5$

57. Find N if $a^2+N+6b^2=(a+b)(a+6b)$

(a) $N=3ab$

(b) $N=2ab$

(c) $N=7ab$

(d) $N=6ab$

58. Find C if $(3x-2)(4x+C)=12x^2+7x-10$

(a) $C=8$

(b) $C=7$

(c) $C=5$

(d) $C=6$

59. Factor GCF $6x^3-18x^2+6x$

(a) $6x(x^2+7x+11)$

(b) $6x(x^2-3x+11)$

(c) $6x(x^2-3x+1)$

(d) $6x(x^2-3x-1)$

60. Factor GCF, $4x^3y-2x^2y^2$

(a) $2x^2y^3(2x-y)$

(b) $2xy(2x+y)$

(c) $2x^2y(2x-y)$

(d) $2x^2y(2x+y)$

61. Factor GCF, $4y-2$

(a) $2(2y+11)$ (b) $2(2y+3)$

(c) $2(2y-1)$ (d) $2(2y+1)$

62. If $2x^2-4=m$ then find $x^2-2=$

(a) $x^2-2 = \frac{m}{5}$ (b) $x^2-2 = \frac{m}{11}$

(c) $x^2-2 = \frac{m}{2}$ (d) $x^2-2 = \frac{m}{3}$

63. Factor a^2-b^2

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

(c) $(a+b)(a-b)$ (d) $(a+b)(a+b)$

64. Factor x^2-25

(a) $(x+5)(x+15)$ (b) $(x+5)(x+5)$

(c) $(x+5)(x-5)$ (d) $(x-5)(x-5)$

65. Factor x^2-25y^2

(a) $(x+5y)(x+11y)$ (b) $(x+5y)(x+5y)$

(c) $(x+5y)(x-5y)$ (d) $(x-5y)(x-5y)$

66. Factor $100x^2-9y^2$

(a) $(10x+3y)(10x+y)$ (b) $(10x+3y)(10x+3y)$

(c) $(10x+3y)(10x-3y)$ (d) $(10x-3y)(10x-3y)$

67 Factor $\frac{x^2}{9} - 64$

(a) $(3x+8)(3x-8)$ (b) $(\frac{x}{3}+8)(\frac{x}{3}+8)$

(c) $(\frac{x}{3}+8)(\frac{x}{3}-8)$ (d) $(\frac{x}{3}-8)(\frac{x}{3}-8)$

68 Factor $\frac{x^2}{9} - \frac{y^2}{25}$

(a) $(3x+5y)(3x-5y)$ (b) $(\frac{x}{3} + \frac{y}{5})(\frac{x}{3} + \frac{y}{5})$

(c) $(\frac{x}{3} + \frac{y}{5})(\frac{x}{3} - \frac{y}{5})$ (d) $(\frac{x}{3} - \frac{y}{5})(\frac{x}{3} - \frac{y}{5})$

69 Factor GCF $8x^3 + 14x^2 + 12xy$

(a) $2x(4x^2 - 7x - 6y)$ (b) $2x(4x^2 + 11x + 6y)$

(c) $2x(4x^2 + 7x + 6y)$ (d) $2x(4x^2 + 3x + y)$

70 Simplify $\frac{x+x^2}{x}$

(a) $1-2x$

(b) $1+2x$

(c) $1+x$

(d) $1-x$

71 Simplify $\frac{ab+b}{b}$

(a) $2a-1$

(b) $2a+1$

(c) $a+1$

(d) $a-1$

72 Simplify $\frac{5xy+y}{y}$

(a) $2x+1$

(b) $3x+1$

(c) $5x+1$

(d) $5x-1$

73. Simplify $\frac{8n+4}{4}$

(a) $2n+5$ (b) $3n+1$

(c) $2n+1$ (d) $2n-1$

74. Solve $2x(x+5)=0$

(a) $\{-2, 5\}$ (b) $\{2, 5\}$

(c) $\{0, -5\}$ (d) $\{0, 5\}$

75. Solve $x^2+8x+12=0$

(a) $\{1, -6\}$ (b) $\{2, 6\}$

(c) $\{-2, -6\}$ (d) $\{-2, 6\}$

76. Solve $x^2+6x+8=0$

(a) $\{1, 4\}$ (b) $\{2, 4\}$

(c) $\{-2, -4\}$ (d) $\{-2, 4\}$

77. Solve $x^2+x-12=0$

(a) $\{3, 7\}$ (b) $\{-3, -4\}$

(c) $\{3, -4\}$ (d) $\{3, 4\}$

78. Solve $x^2-x-2=0$

(a) $\{1, 3\}$ (b) $\{1, 2\}$

(c) $\{-1, 2\}$ (d) $\{-1, -2\}$

79. Solve $x^2 - 12 = x$

(a) $\{3, 6\}$

(b) $\{-3, -4\}$

(c) $\{-3, 4\}$

(d) $\{3, 4\}$

80. Solve $x^2 - 6x = -8$

(a) $\{2, 8\}$

(b) $\{-2, -4\}$

(c) $\{2, 4\}$

(d) $\{-2, 4\}$

81. Solve $2x^2 + 5x - 12 = 0$

(a) $\{-\frac{7}{2}, -4\}$

(b) $\{\frac{1}{2}, 4\}$

(c) $\{\frac{3}{2}, -4\}$

(d) $\{-\frac{3}{2}, -4\}$

82. Solve $3x^2 + 13x = 10$

(a) $\{-3, 5\}$

(b) $\{\frac{2}{3}, 5\}$

(c) $\{\frac{2}{3}, -5\}$

(d) $\{-\frac{2}{3}, -5\}$

83. Solve $2x^2 = -7x - 3$

(a) $\{-2, -3\}$

(b) $\{\frac{1}{2}, 3\}$

(c) $\{-\frac{1}{2}, -3\}$

(d) $\{-\frac{1}{2}, 3\}$

84. Solve $8x^2 - 1 = 7x$

(a) $\{\frac{7}{8}, 1\}$

(b) $\{-8, 1\}$

(c) $\{-\frac{1}{8}, 1\}$

(d) $\{-\frac{1}{8}, -1\}$

85. Solve $2x^2 + 5x - 3 = 0$ (use Quadratic formula)

(a) $\{\frac{1}{3}, \frac{1}{2}\}$

(b) $\{-3, -\frac{1}{2}\}$

(c) $\{-3, \frac{1}{2}\}$

(d) $\{3, \frac{1}{2}\}$

86. Solve $x^2 + 8x + 11 = 0$ (use Quadratic formula)

(a) $\{1, 11\}$

(b) $\{-7 - \sqrt{5}, -7 + \sqrt{5}\}$

(c) $\{-4 - \sqrt{5}, -4 + \sqrt{5}\}$

(d) $\{-4 - \sqrt{2}, -4 + \sqrt{2}\}$

87. Solve $x^2 + 2x + 10 = 0$ (use Quadratic formula)

(a) $\{-5 - 3i, -5 + 3i\}$

(b) $\{2 - 3i, 2 + 3i\}$

(c) $\{-1 - 3i, -1 + 3i\}$

(d) $\{1 - 3i, 1 + 3i\}$

88. Solve $(x-2)^2 = 25$

(a) $\{2, 25\}$

(b) $\{3, 7\}$

(c) $\{-3, 7\}$

(d) $\{-3, -7\}$

89. Solve $(x+2)^2 = 7$

(a) $\{-5 - \sqrt{3}, -5 + \sqrt{3}\}$

(b) $\{3 + \sqrt{2}, 3 - \sqrt{2}\}$

(c) $\{-2 - \sqrt{7}, -2 + \sqrt{7}\}$

(d) $\{2 - \sqrt{7}, 2 + \sqrt{7}\}$

90. Solve $(x-2)^2 - 5 = 0$

(a) $\{-5, 5\}$

(b) $\{2, 5\}$

(c) $\{2 - \sqrt{5}, 2 + \sqrt{5}\}$

(d) $\{2 - \sqrt{3}, 2 + \sqrt{3}\}$

91) Solve $\sqrt{x+1} = 5$

(a) $x = 18$

(b) $x = 14$

(c) $x = 24$

(d) $x = 20$

92) Solve $\sqrt{x} + 3 = 10$

(a) $x = 50$

(b) $x = 14$

(c) $x = 49$

(d) $x = 7$

93) Solve $\frac{3}{x} = \frac{x}{12}$

(a) $\{3, 12\}$

(b) $\{-3, 3\}$

(c) $\{-6, 6\}$

(d) $\{-4, 4\}$

94) Solve $\frac{1}{x} = \frac{x}{5}$

(a) $\{1, -5\}$

(b) $\{-5, 5\}$

(c) $\{-\sqrt{5}, \sqrt{5}\}$

(d) $\{-\sqrt{3}, \sqrt{3}\}$

95) Solve $7x^2 = 1$

(a) $\{-\sqrt{7}, \sqrt{7}\}$

(b) $\{-\sqrt{\frac{1}{7}}, \sqrt{\frac{1}{7}}\}$

(c) $\{-\sqrt{\frac{1}{7}}, \sqrt{\frac{1}{7}}\}$

(d) $\{-\frac{1}{7}, \frac{1}{7}\}$

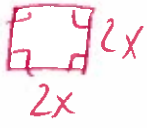
96) Solve for r , $A = \pi r^2$

(a) $r = \pi \sqrt{3A}$

(b) $r = \sqrt{\pi A}$

(c) $r = \sqrt{\frac{A}{\pi}}$

(d) $r = \pi A$

97.  If area of the square is 100 then find x .

(a) $x = 2$

(b) $x = 10$

(c) $x = 5$

(d) $x = 6$

98. Solve $x + 3y = 5$
 $5x - y = 9$

(a) $(x, y) = (-2, 7)$

(b) $(x, y) = (5, 9)$

(c) $(x, y) = (2, 1)$

(d) $(x, y) = (-2, -1)$

99. Solve $x + 2y = 7$
 $x - 2y = 3$

(a) $(x, y) = (-2, 7)$

(b) $(x, y) = (-5, -7)$

(c) $(x, y) = (5, 1)$

(d) $(x, y) = (-5, -1)$

100. Solve $x - y = 20$
 $x = 3y$

(a) $(x, y) = (1, 10)$

(b) $(x, y) = (10, 30)$

(c) $(x, y) = (30, 10)$

(d) $(x, y) = (10, 40)$

101. Solve $x - 2y = 4$
 $x - 2y = 5$

(a) $(x, y) = (4, 5)$

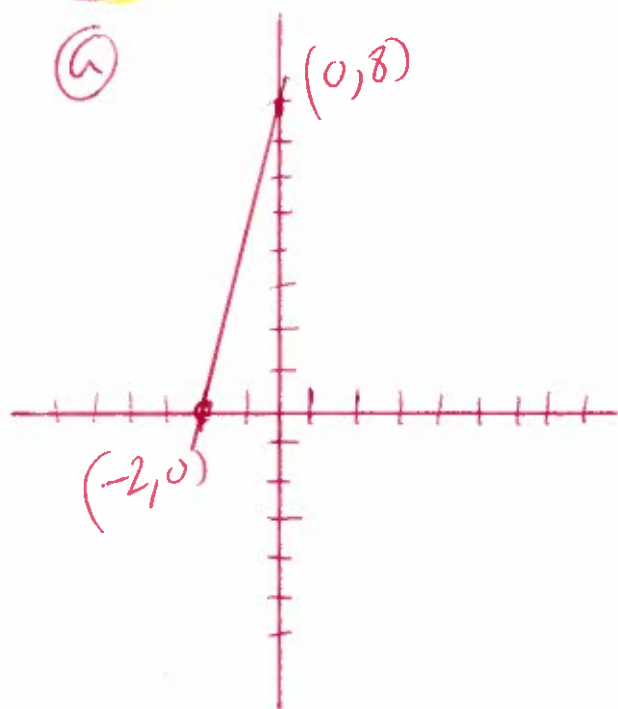
(b) $(x, y) = (-4, -5)$

(c) No solution

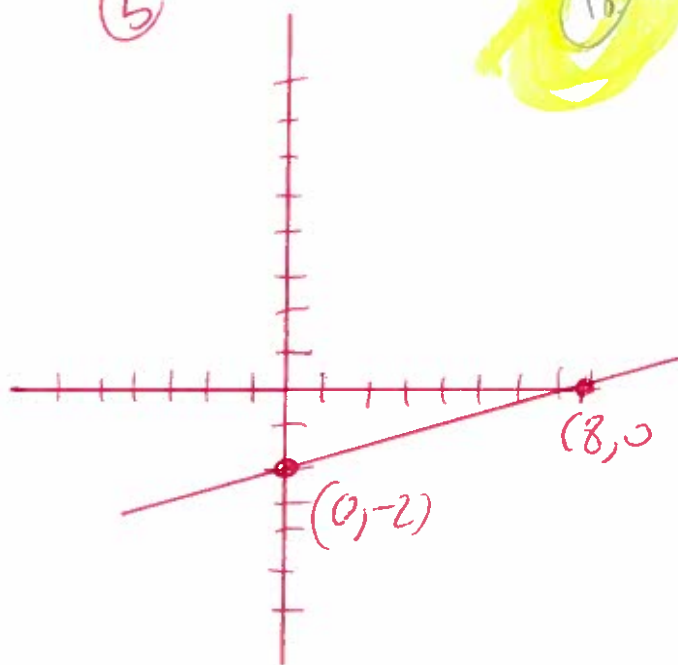
(d) $(x, y) = (1, 9)$

102 Graph $y = -2x + 8$

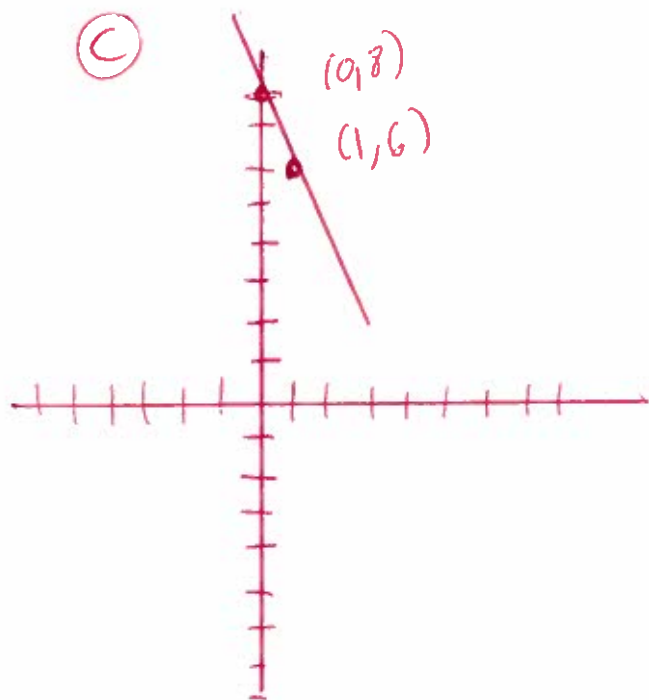
a



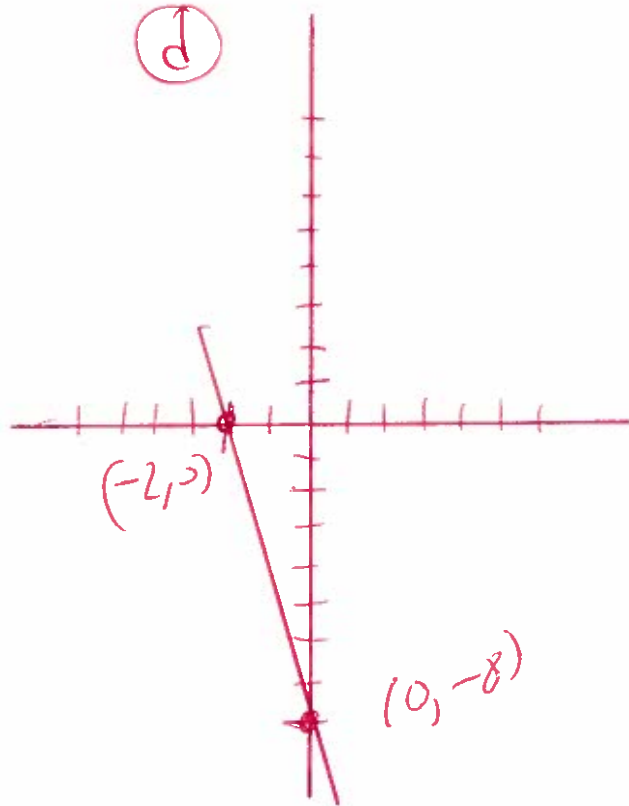
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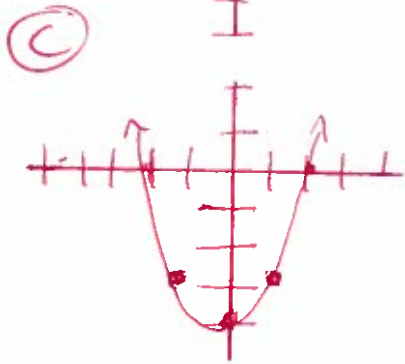
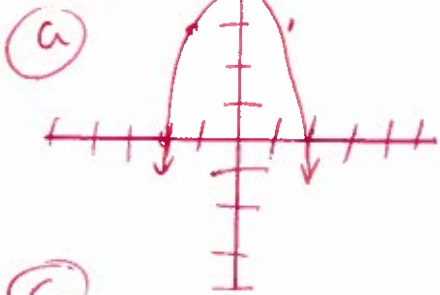
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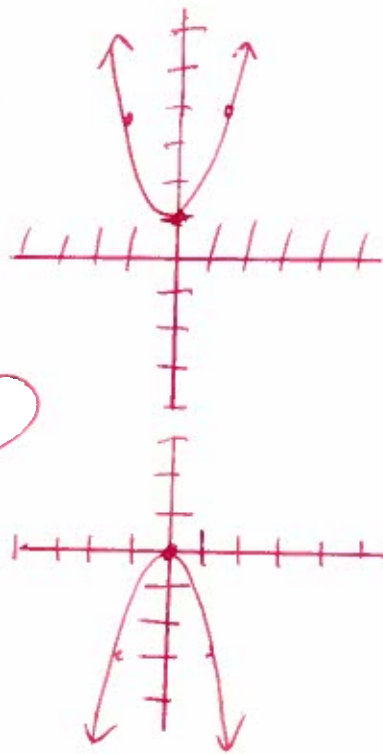
d



103. Graph $y = x^2 - 4$

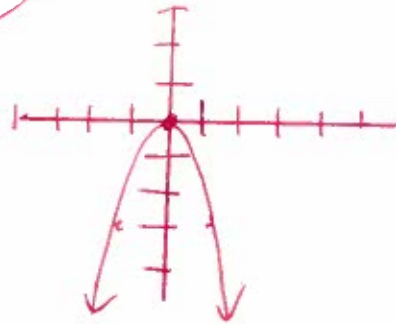


(b)



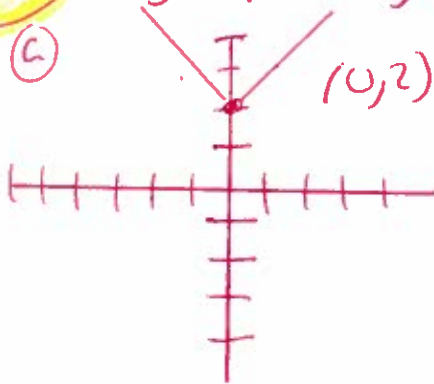
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(d)

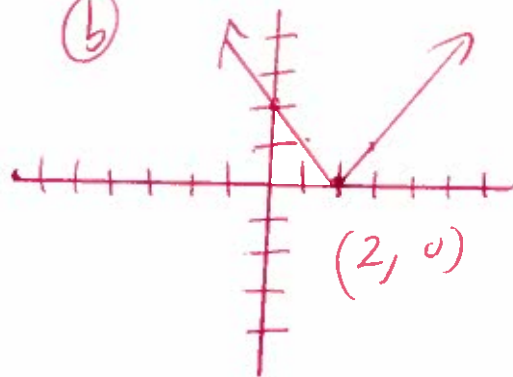


104. Graph $y = |x| - 2$

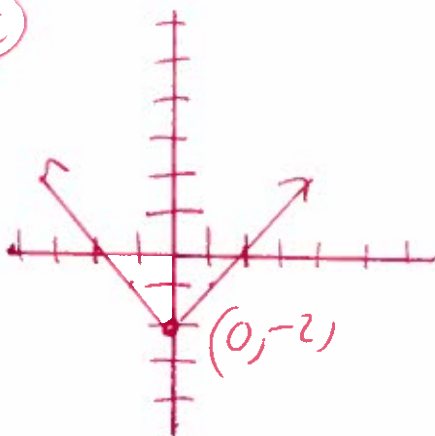
(a)



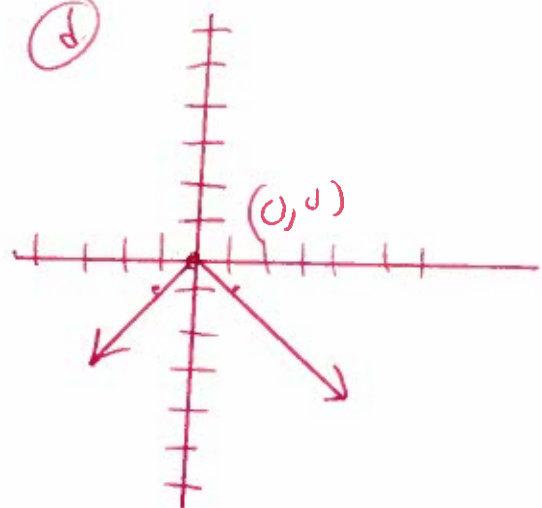
(b)



(c)



(d)



105 Simplify $\left(\frac{2x}{3y}\right)\left(\frac{9y}{8x^2}\right)$

(a) $3x$

(b) $\frac{3y}{4x}$

(c) $\frac{3}{4x}$

(d) $\frac{9}{4x}$

106 Solve $x^3 + 6x^2 + 8x = 0$

(a) $\{0, -2, 4\}$

(b) $\{0, 2, 4\}$

(c) $\{0, -2, -4\}$

(d) $\{1, -2, -4\}$

107 Solve $4^3 = 2^k$

(b) $k = 3$

(a) $k = 2$

(c) $k = 6$

(d) $k = 4$

108 If a box has 5 red, 3 green, and 4 blue jelly beans then what is the probability of choosing at random a red jelly bean.

(a) $\frac{7}{12}$

(b) $\frac{1}{12}$

(c) $\frac{5}{12}$

(d) $\frac{2}{7}$

109 If on a map 1 inch equals 10 miles then 30 inches equals how many miles?

(a) 3000

(b) 100

(c) 300

(d) 200

110 Find $f(\frac{1}{4})$ if $f(x) = \frac{1}{x} + \frac{3}{x}$

(a) $f(\frac{1}{4}) = 18$

(b) $f(\frac{1}{4}) = \frac{1}{8}$

(c) $f(\frac{1}{4}) = 16$

(d) $f(\frac{1}{4}) = 10$

21.

111 Solve for x , $\frac{ax-b}{4a-1} = b$

(a) $x = 5b$

(b) $x = 8b$

(c) $x = 4b$

(d) $x = 3b$

112 If the side of a square is $3x$ and the area is 900 then find x .

(a) $x = 4$

(b) $x = 2$

(c) $x = 10$

(d) $x = 100$

113 If the perimeter of a rectangle is 160 and the width is 30 then find the area of the rectangle.

(a) area = 300

(b) area = 3000

(c) area = 1500

(d) area = 150

114 Find $f(8)$ if $f(x) = \frac{\sqrt{x}}{2}$

(a) $f(8) = 4$

(b) $f(8) = 2$

(c) $f(8) = \sqrt{2}$

(d) $f(8) = 2\sqrt{2}$

115 Solve $100 = 80 + \frac{x}{2}$

(a) $x = 180$

(b) $x = 80$

(c) $x = 40$

(d) $x = 20$

116 Solve $\frac{60x}{20} = 18$

(a) $x = 3$

(b) $x = 5$

(c) $x = 6$

(d) $x = 7$

(117) simplify $\frac{a^6 b^7}{a^2 b^9}$

(a) $a^4 b^4$

(b) $\frac{a^4}{b^2}$

(c) $a^3 b^2$

(d) $\frac{a^5}{b^2}$

(21)

(118) solve $x+y=9$
 $3x+4y=28$

(a) $(x,y) = (5,4)$

(c) $(x,y) = (8,1)$

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

(d) $(x,y) = (6,3)$

(119) solve $x^2 + 6x - 16 = 0$

(a) $\{2, 8\}$

(c) $\{2, -8\}$

(b) $\{-1, 16\}$

(d) $\{-2, -8\}$

(120) solve $2(x^2 - 6) = 60$

(a) $\{2, 6\}$

(c) $\{-6, 6\}$

(b) $\{-6, 1\}$

(d) $\{6\}$

(121) solve $2(12x^2 + 7x) = 24$

(a) $\{\frac{4}{3}, -\frac{3}{4}\}$

(c) $\{-\frac{4}{3}, \frac{3}{4}\}$

(b) $\{-\frac{4}{3}, -\frac{3}{4}\}$

(d) $\{\frac{4}{3}, \frac{3}{4}\}$

(122) solve $2x + 40 < x$

(a) $x < 40$

(c) $x < -40$

(b) $x < 20$

(d) $x < -20$

(123) If a big hog weighs 8 pounds more than a little hog and 3 times the weight of the little hog equals 2 times the weight of the big hog then find the weight of the little hog.

(a) 10

(c) 16

(b) 24

(d) 8

124 $x^2 - x = 12$

(a) $\{3, -4\}$

(c) $\{-3, 4\}$

(b) $\{3, 4\}$

(d) $\{-3, -4\}$

125 $x^2 - 16 = 6x$

(a) $\{2, -8\}$

(c) $\{-2, 8\}$

(b) $\{2, 8\}$

(d) $\{-2, -8\}$

126 $x(x-6)=7$

(a) $\{1, -7\}$

(c) $\{-1, 7\}$

(b) $\{1, 7\}$

(d) $\{-1, -7\}$

127 Find a common factor for $3y^3 + 2y^2$ and $6y^4 + 4y^3$

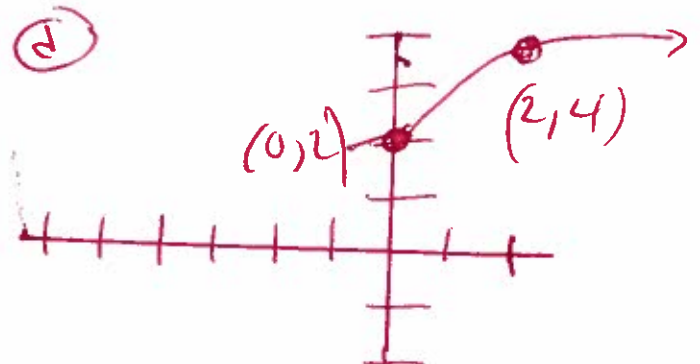
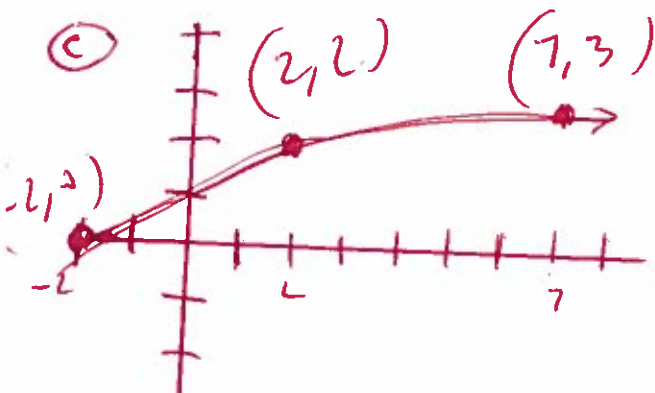
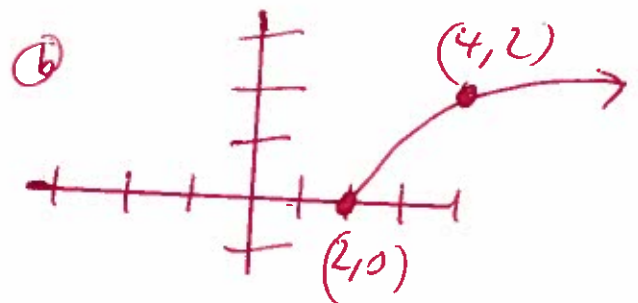
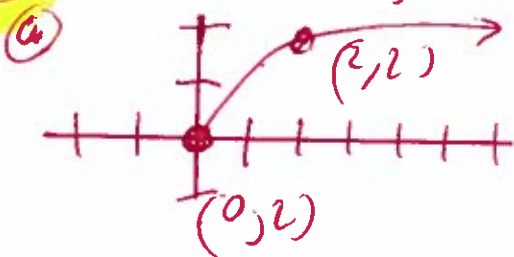
(a) $3y+5$

(b) $y+2$

(c) $3y+2$

(d) $3y+1$

128 graph $y = \sqrt{x+2}$



23

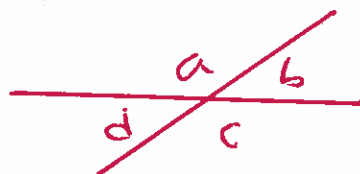
129. Find the average of a, b, c, d .

(a) 45

(b) 60

(c) 90

(d) 180



24

130. For what value(s) is $f(x) = \frac{x-1}{x^2-4}$ undefined?

(a) $\{0, 1\}$

(b) $\{1, -1\}$

(c) $\{-2, 2\}$

(d) $\{-4, 4\}$

131. Solve for x and y

$$x + 3y = 5$$

$$2x - y = 3$$

(a) $(x, y) = (2, -1)$

(b) $(x, y) = (-2, 1)$

(c) $(x, y) = (2, 1)$

(d) $(x, y) = (-2, -1)$

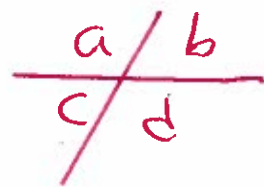
132. Find the average of a and b .

(a) 60

(b) 45

(c) 90

(d) 180



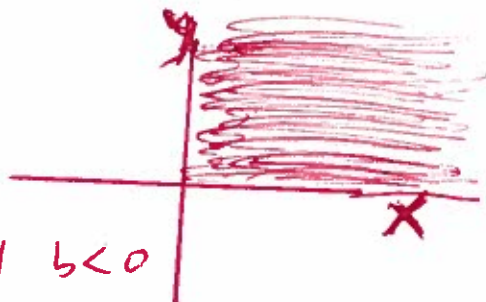
133. If point (a, b) is in shaded area then

(a) $a < 0$ and $b > 0$

(b) $a > 0$ and $b < 0$

(c) $a > 0$ and $b > 0$

(d) $a < 0$ and $b < 0$



25.

(Step by Step Solutions)

① Find $f(2)$ if $f(x) = 8000(1.04)^x$

$$f(2) = 8000(1.04)^2$$

$$f(2) = 8000(1.04)(1.04)$$

$$f(2) = 8000(1.0816)$$

$$f(2) = 8652.80$$

② Find C if $C = \frac{5}{9}(F - 32)$, $F = 86$

$$C = \frac{5}{9}(86 - 32)$$

$$C = \frac{5}{9}(54)$$

$$C = 5(6)$$

$$C = 30$$

③ Find y if $y = 2x^2 - 4x - 6$, $x = -2$

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

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

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

$$y = 8 + 8 - 6$$

$$y = 16 - 6$$

$$y = 10$$

(4) Evaluate $(x+3)(x+4)$ if $x=-4$

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

$$(-1)(0)=$$

$$0=$$

(5) Find P if $P=2(L+W)$, $L=6$, $W=2$

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

$$P=2(8)$$

$$P=16$$

(6) Find $f(4)$ if $f(x) = \frac{x+18}{x-3}$

$$f(4) = \frac{4+18}{4-3}$$

$$f(4) = \frac{22}{1}$$

$$f(4) = 22$$

(7) Find C if $C = P + .05P$, $P=30$

$$C = 30 + .05(30)$$

$$C = 30 + 1.50$$

$$C = 31.50$$

⑧ Find $h(2)$ if $h(x) = -16x^2 + 32x$

$$h(2) = -16(2)^2 + 32(2)$$

$$h(2) = -16(2)(2) + 32(2)$$

$$h(2) = -16(4) + 32(2)$$

$$h(2) = -64 + 64$$

$$h(2) = 0$$

⑨ Find y if $y = 31.95x + 0.10m$, $x=5$, $m=200$

$$y = 31.95(5) + 0.10(200)$$

$$y = 159.75 + 20$$

$$y = 179.75$$

⑩ Find $Pr - r$ if $p = -9$, $r = \frac{1}{2}$

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

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

$$-\frac{9}{2} - \frac{1}{2} =$$

$$\frac{-9-1}{2} =$$

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

$$-5 =$$

11. Find y if $y = \sqrt{x+1} + 8$, $x = 0$

$$y = \sqrt{0+1} + 8$$

$$y = \sqrt{1} + 8$$

$$y = 1 + 8$$

$$y = 9$$

12. Find $g(2)$ if $g(x) = \frac{x}{1-x}$

$$g(2) = \frac{2}{1-(2)}$$

$$g(2) = \frac{2}{1-2}$$

$$g(2) = \frac{2}{-1}$$

$$g(2) = -2$$

13. Find $f(-3)$ if $f(x) = |x-2|$

$$f(-3) = |-3-2|$$

$$f(-3) = |-5|$$

$$f(-3) = 5$$

14. Find $f(-1)$ if $f(x) = 4x^2$

$$f(-1) = 4(-1)^2$$

$$f(-1) = 4(-1)(-1)$$

$$f(-1) = 4(1)$$

$$f(-1) = 4$$

15. Find $f(-1)$ if $f(x) = \frac{x-1}{x^2-9}$

$$f(-1) = \frac{(-1)-1}{(-1)^2-9}$$

$$f(-1) = \frac{-1-1}{(-1)(-1)-9}$$

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

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

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

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

$$f(-1) = \frac{1}{4}$$

16. Find $f(1)$ if $f(x) = (x-1)^2 + 8$

$$f(1) = (1-1)^2 + 8$$

$$f(1) = (0)^2 + 8$$

$$f(1) = (0)(0) + 8$$

$$f(1) = 0 + 8$$

$$f(1) = 8$$

17. Find 5^{-2}

$$5^{-2} =$$

$$\frac{1}{5^2} =$$

$$\frac{1}{5 \cdot 5} =$$

$$\frac{1}{25} =$$

18. Find A if $A = \pi r^2$, $\pi = 3.14$, $r = 4$
 $A = \pi r^2$

$$A = 3.14(4)^2$$

$$A = 3.14(4)(4)$$

$$A = 3.14(16)$$

$$A = 50.24$$

19. Find $x - y$ if $x = \frac{1}{4}$, $y = -x$

$$x - y =$$

$$x - (-x) =$$

$$x + x =$$

$$2x =$$

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

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

Subst

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

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

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

20 Find the average of
2800, 1800, 1000, 1400, 2300

$$\begin{array}{r} 2800 \\ 1800 \\ 1000 \\ 1400 \\ + 2300 \\ \hline 9300 \end{array}$$

$$\begin{array}{r} 1860 \\ 5 \overline{) 9300} \\ \underline{(5)} \\ 43 \\ \underline{-(40)} \\ 30 \end{array}$$

21. Solve $4x + 1 = 10$

$$4x + 1 - 1 = 10 - 1$$

$$4x = 9$$

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

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

22. Solve $1 + \frac{6}{x} = -23$

$$1 + \frac{6}{x} = -23$$

$$1 + \frac{6}{x} - 1 = -23 - 1$$

$$\frac{6}{x} = -24$$

$$\frac{6}{x} = \frac{-24}{1}$$

Cross
Multiply

$$6(1) = -24(x)$$

$$6 = -24x$$

$$\frac{6}{-24} = \frac{-24x}{-24}$$

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

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

(23) Find y if $3x + 2y = 90$, $x = 10$

$$3x + 2y = 90$$

$$3(10) + 2y = 90$$

$$30 + 2y = 90$$

$$\cancel{30} + 2y - \cancel{30} = 90 - 30$$

$$2y = 60$$

$$\frac{2y}{2} = \frac{60}{2}$$

$$y = 30$$

(24) Solve $\frac{3}{2}x + 1 = 5$

$$\frac{3}{2}x + 1 - 1 = 5 - 1$$

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

$$\frac{3}{2}x = \frac{4}{1}$$

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

$$x = \frac{8}{3}$$

(25.) Solve $7x - 2 = 5 + 3x$

$$7x - \cancel{2} + \cancel{2} = 5 + 3x + 2$$

$$7x = 3x + 7$$

$$7x - 3x = \cancel{3x} + 7 - \cancel{3x}$$

$$4x = 7$$

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

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

(26.) Solve $6x + 12 = 2x$

$$6x + \cancel{12} - \cancel{12} = 2x - 12$$

$$6x = 2x - 12$$

$$6x - 2x = 2x - 12 - \cancel{2x}$$

$$4x = -12$$

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

$$x = -3$$

(27.) Find C if $K = C + 294$, $K = 10$

$$K = C + 294$$

$$10 = C + 294$$

$$10 - 294 = C + 294 - 294$$

$$-284 = C$$

28) Solve $8-x=2(x-8)$

$$8-x=2x-16$$

$$\cancel{8}-x-\cancel{8}=2x-16-8$$

$$-x=2x-24$$

$$-x-2x=2x-24-2x$$

$$-1x-2x=-24$$

$$-3x=-24$$

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

$$x=8$$

29) Solve $\frac{x}{9} = \frac{x+1}{10}$

$$10(x) = 9(x+1) \quad \text{cross multiply}$$

$$10x = 9x + 9$$

$$10x - 9x = \cancel{9x} + 9 - \cancel{9x}$$

$$1x = 9$$

$$x=9$$

30) If $2x+1=4$ find $12x$

$$2x+1-1=4-1$$

$$2x=3$$

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

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

$$12x = \text{subst}$$

$$12\left(\frac{3}{2}\right) = \text{divide}$$

$$6(3) =$$

$$18 =$$

31) Solve $3 = \frac{12-x}{x}$

$$\frac{3}{1} = \frac{12-x}{x}$$

$$3(x) = 1(12-x)$$

$$3x = 12 - 1x$$

$$3x + 1x = 12 - \cancel{1x} + \cancel{1x}$$

$$4x = 12$$

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

$$x = 3$$

32) Find a if $ax - 25 = x + 2$, $x = 3$

$$ax - 25 = x + 2$$

$$a(3) - 25 = (3) + 2$$

$$3a - 25 = 3 + 2$$

$$3a - 25 = 5$$

$$3a - \cancel{25} + \cancel{25} = 5 + 25$$

$$3a = 30$$

$$\frac{3a}{3} = \frac{30}{3}$$

$$a = 10$$

33) Solve $6(x-2)-20=2x$

$$6x - 12 - 20 = 2x$$

$$6x - 32 = 2x$$

$$6x - \cancel{32} + 32 = 2x + 32$$

$$6x = 2x + 32$$

$$6x - 2x = \cancel{2x} + 32 - \cancel{2x}$$

$$4x = 32$$

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

$$x = 8$$

34) Solve $5x = 12 + 2x$

$$5x - 2x = 12 + \cancel{2x} - \cancel{2x}$$

$$3x = 12$$

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

$$x = 4$$

35) Solve $x - 8 = 3x - 8$

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

$$x = 3x$$

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

$$1x - 3x = 0$$

$$-2x = 0$$

$$\frac{-2x}{-2} = \frac{0}{-2}$$

$$x = 0$$

36 Solve $x - 8 = 8 - x$

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

$$x = -x + 16$$

$$x + x = \cancel{-x} + 16 + \cancel{x}$$

$$1x + 1x = 16$$

$$2x = 16$$

$$\frac{2x}{2} = \frac{16}{2}$$

$$x = 8$$

38

37 Solve $3(x) = 2(x + 8)$

$$3x = 2x + 16$$

$$3x - 2x = \cancel{2x} + 16 - \cancel{2x}$$

$$1x = 16$$

$$x = 16$$

38 Solve $\frac{2}{5x} + \frac{1}{x} = 14$

$$\frac{2}{\cancel{5x}} (5x) + \frac{1}{\cancel{x}} (5x) = \frac{14}{1} (5x)$$

$$2(1) + 1(5) = 14(5x)$$

$$2 + 5 = 70x$$

$$7 = 70x$$

$$\frac{7}{70} = \frac{70}{70}x$$

mult by
LCD $\frac{2}{14} \frac{5}{5} = \frac{70}{70}$

$$\frac{7}{70} = x$$

$$\frac{7(1)}{7(10)} = x$$

$$\frac{1}{10} = x$$

(39) If $2x+1=4$ find $x+2$

$$2x + \cancel{1} - 1 = 4 - 1$$

$$2x = 3$$

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

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

find $x+2 =$ Subst

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

$$\frac{3}{2} + \frac{2}{1} =$$

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

$$\frac{3}{2} + \frac{4}{2}$$

$$\frac{3+4}{2} =$$

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

(40) If $4x-1=x$ find $30x$

$$4x - \cancel{1} + 1 = x + 1$$

$$4x = x + 1$$

$$4x - x = x + 1 - x$$

$$4x - 1x = 1$$

$$3x = 1$$

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

$$\text{find } x = \frac{1}{3}$$

$$30x =$$

$$30 \left(\frac{1}{3} \right) = \text{Subst}$$

$$10(1) =$$

$$10 =$$

(41.)

Solve $-2x < 8$

$$\frac{-2x}{-2} > \frac{8}{-2} \quad \text{Turn alligator around}$$

40

$$x > -4$$

(42.)

Solve $2x < -6$

$$\frac{2x}{2} < \frac{-6}{2}$$

$$x < -3$$

(43.)

Solve $\frac{x}{4} + \frac{3x}{8} > 20$

$$\frac{x}{4}(8) + \frac{3x}{8}(8) > \frac{20}{1}(8)$$

mult by
LCD = 8

$$x(2) + 3x(1) > 20(8)$$

$$2x + 3x > 160$$

$$5x > 160$$

$$\frac{5x}{5} > \frac{160}{5}$$

$$x > 32$$

$$\begin{array}{r} 32 \\ 5 \overline{) 160} \\ \underline{-(15)} \\ 10 \\ \underline{-(10)} \\ 0 \end{array}$$

(44) If $xy = k$ and $x = 2$ when $y = 10$ then find x when $y = 5$.

$$xy = k$$

$$(2)(10) = k \text{ Subst}$$

$$20 = k$$

$$xy = 20 \text{ (Now)}$$

$$x(5) = 20 \text{ Subst}$$

$$5x = 20$$

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

$$x = 4$$

(45) Simplify $\left(\frac{12}{x}\right)^2$

$$\left(\frac{12}{x}\right)\left(\frac{12}{x}\right) =$$

$$\frac{144}{x^2} =$$

(46) Simplify $\left(\frac{5}{x}\right)^3$

$$\left(\frac{5}{x}\right)\left(\frac{5}{x}\right)\left(\frac{5}{x}\right) =$$

$$\frac{125}{x^3} =$$

47. Simplify $\left(\frac{6k}{2}\right)^2$

$$\left(\frac{6k}{2}\right)^2 =$$

$$(3k)^2 =$$

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

$$9k^2 =$$

48. Simplify $p - .12p$

$$p - .12p =$$

$$1.00p - .12p =$$

$$.88p =$$

49. Simplify $(3x-2)(x+5)$

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

$$3x^2 + 15x - 2x - 10 =$$

$$3x^2 + 13x - 10 =$$

50. Simplify $(2a-b)(2a+b)$

$$(2a-b)(2a+b) =$$

$$4a^2 + 2ab - 2ab - b^2 =$$

$$4a^2 - b^2 =$$

51) Simplify $(2a-b)^2$

$$(2a-b)^2 =$$

$$(2a-b)(2a-b) =$$

$$4a^2 - 2ab - 2ab + b^2 =$$

$$4a^2 - 4ab + b^2 =$$

52) Simplify $4a^2(ab^2 + b^2)$

$$4a^2(ab^2 + b^2) =$$

$$4a^2(1a^1b^2 + 1b^2) =$$

$$4a^3b^2 + 4a^2b^2 =$$

53) $(2x^1y^2)(4x^3y^4) =$

$$(2x^1y^2)(4x^3y^4) =$$

$$8x^{1+3}y^{2+4} =$$

$$8x^4y^6 =$$

54) $(2xy^4)^2 =$

$$(2^1x^1y^4)^2 =$$

$$2^{1(2)}x^{1(2)}y^{4(2)} =$$

$$2^2x^2y^8 =$$

$$\rightarrow (2)(2)x^2y^8 =$$

$$4x^2y^8 =$$

55. $(3+ax)(2x-1)=$

$$6x - 3 + 2ax^2 - 1ax =$$

$$6x - 3 + 2ax^2 - ax =$$

56. Find V if $V = \pi r^2 h$, $r = 3a$, $h = 2a + 3$

$$V = \pi r^2 h$$

$$V = \pi (3a)^2 (2a + 3)$$

$$V = \pi (3a)(3a)(2a + 3)$$

$$V = \pi (9a^2)(2a + 3)$$

$$V = \pi (18a^3 + 27a^2)$$

$$V = 18\pi a^3 + 27\pi a^2$$

57. Find N if $a^2 + N + 6b^2 = (a+b)(a+6b)$

$$a^2 + N + 6b^2 = (a+b)(a+6b)$$

$$= a^2 + 6ab + ab + 6b^2$$

$$= a^2 + 6ab + 1ab + 6b^2$$

$$= a^2 + 7ab + 6b^2$$

$$N = 7ab$$

48

(58) Find C if $(3x-2)(4x+C) = 12x^2 + 7x - 10$

$$(3x-2)(4x+C) = 12x^2 + 7x - 10$$

$$-2C = -10 \quad \text{Last} \times \text{Last} = \text{Last}$$

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

$$C = 5$$

(59) Factor GCF $6x^3 - 18x^2 + 6x$

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

$$6x(x^2 - 3x + 1) =$$

(60) Factor GCF, $4x^3y - 2x^2y^2$

$$4x^3y - 2x^2y^2 =$$

$$4x^3y^1 - 2x^2y^2 =$$

$$2x^2y(2x - 1y) =$$

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

(61) Factor GCF $4y - 2$

$$4y - 2 =$$

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

62. If $2x^2 - 4 = m$ then find $x^2 - 2 =$

$$2x^2 - 4 = m$$

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

$$x^2 - 2 = \frac{m}{2} \leftarrow$$

63. Factor $a^2 - b^2$

$$a^2 - b^2 =$$

$$(a)^2 - (b)^2 =$$

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

64. Factor $x^2 - 25$

$$x^2 - 25 =$$

$$(x)^2 - (5)^2 =$$

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

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

65. Factor $x^2 - 25y^2$

$$x^2 - 25y^2 =$$

$$(x)^2 - (5y)^2 =$$

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

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

(66) Factor $100x^2 - 9y^2$

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

$$100x^2 - 9y^2 =$$

$$(10x)^2 - (3y)^2 =$$

$$(10x+3y)(10x-3y) =$$

(67) Factor $\frac{x^2}{9} - 64$

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

$$\frac{x^2}{9} - 64 =$$

$$\left(\frac{x}{3}\right)^2 - (8)^2 =$$

$$\left(\frac{x}{3} + 8\right)\left(\frac{x}{3} - 8\right) =$$

(68) Factor $\frac{x^2}{9} - \frac{y^2}{25}$

$$\frac{x^2}{9} - \frac{y^2}{25} =$$

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

$$\left(\frac{x}{3} + \frac{y}{5}\right)\left(\frac{x}{3} - \frac{y}{5}\right) =$$

(69) Factor GCF $8x^3 + 14x^2 + 12xy$

$$8x^3 + 14x^2 + 12xy =$$

$$2x(4x^2 + 7x + 6y) =$$

70. Simplify $\frac{x+x^2}{x}$

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

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

$$\frac{x}{x} + \frac{x \cdot \cancel{x}}{\cancel{x}} =$$

$$1 + x =$$

71. Simplify $\frac{ab+b}{b}$

$$\frac{ab+b}{b} =$$

$$\frac{ab}{b} + \frac{b}{b} =$$

$$a + 1 =$$

72. Simplify $\frac{5xy+y}{y}$

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

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

$$5x + 1 =$$

73 Simplify $\frac{8n+4}{4}$

$$\frac{8n+4}{4} =$$

$$\frac{8n}{4} + \frac{4}{4} =$$

$$2n + 1 =$$

74 Solve $2x(x+5) = 0$

$$2x(x+5) = 0$$

$$2x = 0 \quad \text{OR} \quad x+5 = 0$$

$$\frac{2x}{2} = \frac{0}{2} \quad \text{OR} \quad x+5-5 = 0-5$$

$$x = 0 \quad \text{OR} \quad x = -5$$

75 Solve $x^2 + 8x + 12 = 0$

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

$$(x+2)(x+6) = 0$$

$$\text{Let } x+2=0 \quad \text{OR} \quad x+6=0$$

$$x+2-2=0-2 \quad \text{OR} \quad x+6-6=0-6$$

$$x = -2 \quad \text{OR} \quad x = -6$$

76 Solve $x^2 + 6x + 8 = 0$

$$(x+2)(x+4) = 0$$

$$\text{Let } x+2=0 \quad \text{OR} \quad x+4=0$$

$$x+2-2=0-2 \quad \text{OR} \quad x+4-4=0-4$$

$$x = -2 \quad \text{OR} \quad x = -4$$

49

12.1

6.2

3.4

Possible
Combs

8.1

2.4

Possible
Combs

(77) Solve $x^2 + x - 12 = 0$

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

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

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

$$x-3+3=0+3 \text{ OR } x+4-4=0-4$$

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

12.1
6.2
3.4

possibly
Cumbus

59

(78) Solve $x^2 - x - 2 = 0$

$$x^2 - x - 2 = 0$$

$$(x+1)(x-2) = 0$$

Let $x+1=0$ OR $x-2=0$

$$x+1-1=0-1 \text{ OR } x-2+2=0+2$$

$x=-1$ OR $x=2$

2.1
Possibly
Cumbus

(79) Solve $x^2 - 12 = x$

$$x^2 - 12 = x$$

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

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

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

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

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

$$x+3-3=0-3 \text{ OR } x-4+4=0+4$$

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

12.1
6.2
3.4
Possibly
Cumbus

80) Solve $x^2 - 6x = -8$

$$x^2 - 6x = -8$$

$$x^2 - 6x + 8 = -8 + 8$$

$$x^2 - 6x + 8 = 0$$

$$(x-2)(x-4) = 0$$

Let $x-2=0$ OR $x-4=0$

$$x-2+2=0+2 \text{ OR } x-4+4=0+4$$

$x=2$ OR $x=4$

81) Solve $2x^2 + 5x - 12 = 0$

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

$$(2x-3)(x+4) = 0$$

Let $2x-3=0$ OR $x+4=0$

$$2x-3+3=0+3 \text{ OR } x+4-4=0-4$$

$$2x=3 \text{ OR } x=-4$$

$$\frac{2x}{2} = \frac{3}{2} \text{ OR}$$

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

8.1
2.4

Possible
Combos

51

2.1
12.1
6.2
3.4
Possible
Combos

82. Solve $3x^2 + 13x = 10$

$$3x^2 + 13x = 10$$

$$3x^2 + 13x - 10 = 10 - 10$$

$$3x^2 + 13x - 10 = 0$$

$$(3x - 2)(x + 5) = 0$$

Let $3x - 2 = 0$ OR $x + 5 = 0$

$$3x - 2 + 2 = 0 + 2 \quad \text{OR} \quad x + 5 - 5 = 0 - 5$$

$$3x = 2$$

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

OR $x = -5$

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

83. Solve $2x^2 = -7x - 3$

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

$$2x^2 + 7x + 3 = 0 \quad \text{Rearrange}$$

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

Let $2x + 1 = 0$ OR $x + 3 = 0$

$$2x + 1 - 1 = 0 - 1 \quad \text{OR} \quad x + 3 - 3 = 0 - 3$$

$$2x = -1$$

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

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

OR $x = -3$

3.1

10.1
2.5

Possibly
Cumbria

52

2.1

3.1

84. Solve $8x^2 - 1 = 7x$

$$8x^2 - 1 = 7x$$

$$8x^2 - 1 - 7x = 7x - 7x$$

$$8x^2 - 7x - 1 = 0 \quad \text{Rewrite}$$

$$(8x + 1)(x - 1) = 0$$

Set $8x + 1 = 0$ OR $x - 1 = 0$

$$8x + 1 - 1 = 0 - 1 \quad \text{OR} \quad x - 1 + 1 = 0 + 1$$

$$8x = -1$$

OR

$$x = 1$$

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

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

85. Solve $2x^2 + 5x - 3 = 0$ use Quadratic formula

$$2x^2 + 5x - 3 = 0$$

$$a = 2, b = 5, c = -3$$

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

$$x = \frac{-(5) \pm \sqrt{(5)^2 - 4(2)(-3)}}{2(2)}$$

$$x = \frac{-5 \pm \sqrt{25 + 24}}{4}$$

$$x = \frac{-5 \pm \sqrt{49}}{4}$$

$$x = \frac{-5 \pm 7}{4}$$

$$x = \frac{-5-7}{4} \quad \text{OR} \quad x = \frac{-5+7}{4}$$

$$x = \frac{-12}{4} \quad \text{OR} \quad x = \frac{2}{4}$$

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

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

53

8.1
2.4

1.1

Possible
Combs

86. Solve $x^2 + 8x + 11 = 0$

use Quadratic formula

$$1x^2 + 8x + 11 = 0$$

$$a=1, b=8, c=11$$

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

$$x = \frac{-(8) \pm \sqrt{(8)^2 - 4(1)(11)}}{2(1)}$$

$$x = \frac{-8 \pm \sqrt{64 - 44}}{2}$$

$$x = \frac{-8 \pm \sqrt{20}}{2}$$

$$x = \frac{-8 \pm \sqrt{4 \times 5}}{2}$$

$$x = \frac{-8 \pm \sqrt{4} \sqrt{5}}{2}$$

$$x = \frac{-8 \pm 2\sqrt{5}}{2}$$

$$x = \frac{-8}{2} \pm \frac{2\sqrt{5}}{2}$$

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

$$x = -4 - \sqrt{5} \text{ OR}$$

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

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

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

87) Solve $X^2 + 2X + 10 = 0$ use Quadratic formula

$$1X^2 + 2X + 10 = 0$$

$$a=1, b=2, c=10$$

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

$$X = \frac{-(2) \pm \sqrt{(2)^2 - 4(1)(10)}}{2(1)}$$

$$X = \frac{-2 \pm \sqrt{4 - 40}}{2}$$

$$\sqrt{-1} = i$$

$$X = \frac{-2 \pm \sqrt{-36}}{2}$$

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

$$X = -1 \pm 3i$$

$$X = -1 - 3i \quad \text{OR} \quad X = -1 + 3i$$

88. Solve $(x-2)^2 = 25$

$$\sqrt{(x-2)^2} = \pm\sqrt{25}$$

$$x-2 = \pm 5$$

$$x-2 = -5 \quad \text{OR} \quad x-2 = 5$$

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

$$x = -3$$

OR

$$x = 7$$

89. Solve $(x+2)^2 = 7$

$$\sqrt{(x+2)^2} = \pm\sqrt{7}$$

$$x+2 = \pm\sqrt{7}$$

$$x+2 = -\sqrt{7} \quad \text{OR} \quad x+2 = \sqrt{7}$$

$$x+\cancel{2}-\cancel{2} = -\sqrt{7}-2 \quad \text{OR} \quad x+\cancel{2}-\cancel{2} = \sqrt{7}-2$$

$$x = -2 - \sqrt{7}$$

OR

$$x = -2 + \sqrt{7}$$

90. Solve $(x-2)^2 - 5 = 0$

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

$$(x-2)^2 - 5 + 5 = 0 + 5$$

$$(x-2)^2 = 5$$

$$x-2 = -\sqrt{5} \quad \text{OR} \quad x-2 = \sqrt{5}$$

$$x-\cancel{2}+\cancel{2} = -\sqrt{5}+2 \quad \text{OR} \quad x-\cancel{2}+\cancel{2} = \sqrt{5}+2$$

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

$$\text{OR} \quad x = 2 + \sqrt{5}$$

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

$$x-2 = \pm\sqrt{5}$$

91. Solve $\sqrt{x+1} = 5$

$$(\sqrt{x+1})^2 = (5)^2$$

$$x+1 = 25$$

$$x+1-1 = 25-1$$

$$x = 24$$



92. Solve $\sqrt{x} + 3 = 10$

$$\sqrt{x} + 3 - 3 = 10 - 3$$

$$\sqrt{x} = 7$$

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

$$x = 49$$

93. Solve $\frac{3}{x} = \frac{x}{12}$

$$3(12) = x(x) \quad (\text{cross mult})$$

$$36 = x^2$$

$$\pm \sqrt{36} = \sqrt{x^2}$$

$$\pm 6 = x$$

$$x = -6 \quad \text{OR} \quad x = 6$$

94. Solve $\frac{1}{x} = \frac{x}{5}$

$$1(5) = x(x)$$

$$5 = x^2$$

$$\pm \sqrt{5} = \sqrt{x^2}$$

cross
mult

$$\pm \sqrt{5} = x$$

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

OR

$$x = \sqrt{5}$$

(95) Solve $7x^2 = 1$

$$\frac{7x^2}{7} = \frac{1}{7}$$

$$x^2 = \frac{1}{7}$$

$$\sqrt{x^2} = \pm \sqrt{\frac{1}{7}}$$

$$x = \pm \sqrt{\frac{1}{7}}$$

$x = -\sqrt{\frac{1}{7}}$ or $x = \sqrt{\frac{1}{7}}$

(96) Solve for r , $A = \pi r^2$

$$A = \pi r^2$$

$$\frac{A}{\pi} = \frac{\pi r^2}{\pi}$$

$$\frac{A}{\pi} = r^2$$

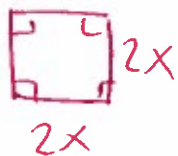
$$\pm \sqrt{\frac{A}{\pi}} = \sqrt{r^2}$$

$$\pm \sqrt{\frac{A}{\pi}} = r$$

$r = -\sqrt{\frac{A}{\pi}}$ or

$r = \sqrt{\frac{A}{\pi}}$

97.



if area of the square is 100
then find x .

59

$$A = LW$$

$$100 = (2x)(2x)$$

$$100 = 4x^2$$

$$\frac{100}{4} = \frac{4x^2}{4}$$

$$25 = x^2$$

$$\pm\sqrt{25} = \sqrt{x^2}$$

$$\pm 5 = x$$

~~$x = -5$~~

$x = 5$

positive answer

98.

Solve

$$x + 3y = 5$$

$$5x - y = 9$$

$$(x + 3y)(1) = (5)(1) \quad \text{Mult}$$

$$(5x - y)(3) = (9)(3) \quad \text{Mult}$$

$$1x + 3y = 5$$

$$15x - 3y = 27$$

$$16x = 32$$

$$\frac{16x}{16} = \frac{32}{16}$$

$$x = 2$$

$$x + 3y = 5$$

$$2 + 3y = 5 \quad \text{subst}$$

$$2 + 3y - 2 = 5 - 2$$

$$3y = 3$$

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

$$y = 1$$

$$(x, y)$$

$$(2, 1)$$

99. Solve $x+2y=7$
 $x-2y=3$

60

$$\begin{array}{r} x+2y=7 \\ x-2y=3 \\ \hline \end{array}$$

$$2x = 10$$

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

$$x=5$$

Subst

$$x+2y=7$$

$$5+2y=7$$

$$\cancel{5}+2y-\cancel{5}=7-\cancel{5}$$

$$2y=2$$

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

$$y=1$$

$$(x, y) = (5, 1)$$

100. Solve $x-y=20$
 $x=3y$

$$(3y)-y=20$$

$$3y-1y=20$$

$$2y=20$$

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

$$y=10$$

Subst

$$x=3y$$

$$x=3(10)$$

$$x=30$$

$$(x, y) = (30, 10)$$

(101) Solve $x - 2y = 4$

$x - 2y = 5$

$(x - 2y)(-1) = (4)(-1)$ Multi

$(x - 2y)(1) = (5)(1)$

$-x + 2y = -4$

$x - 2y = 5$

$0 + 0 = 1$

$0 \neq 1$

No Solution

(102) Graph

$y = -2x + 8$

$y = -2x + 8$

x	y
0	8
1	6

$y = -2(0) + 8$

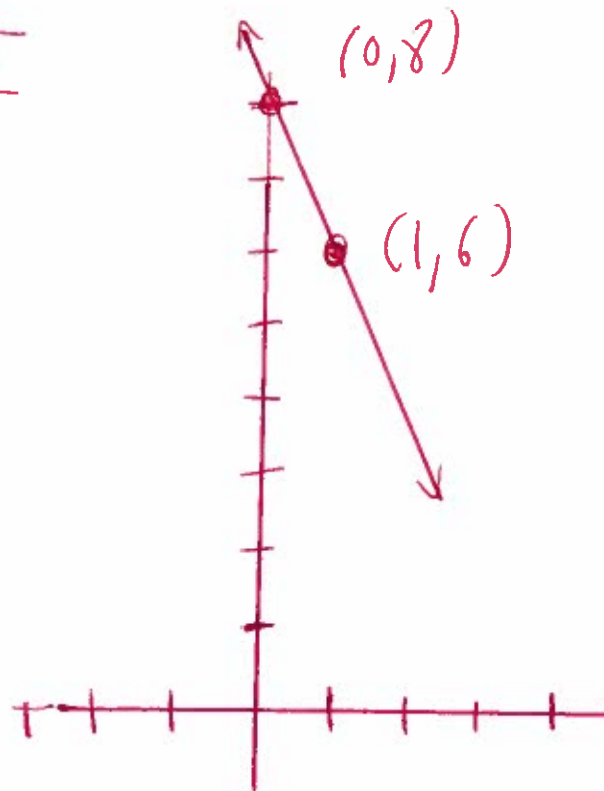
$y = 0 + 8$

$y = 8$

$y = -2(1) + 8$

$y = -2 + 8$

$y = 6$



103 graph $y = x^2 - 4$

$$y = (-1)^2 - 4$$

$$y = (-1)(-1) - 4$$

$$y = 1 - 4$$

$$y = -3$$

$$y = (0)^2 - 4$$

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

$$y = 0 - 4$$

$$y = -4$$

$$y = (1)^2 - 4$$

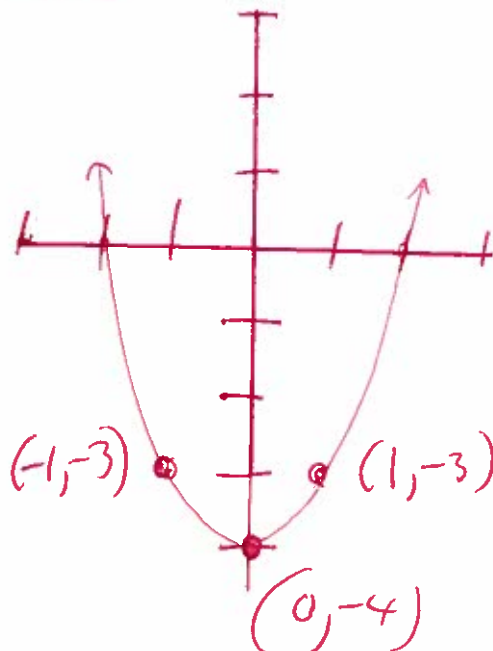
$$y = (1)(1) - 4$$

$$y = 1 - 4$$

$$y = -3$$

x	y
-1	-3
0	-4
1	-3

62



104 graph $y = |x| - 2$

$$y = |-1| - 2$$

$$y = 1 - 2$$

$$y = -1$$

$$y = |0| - 2$$

$$y = 0 - 2$$

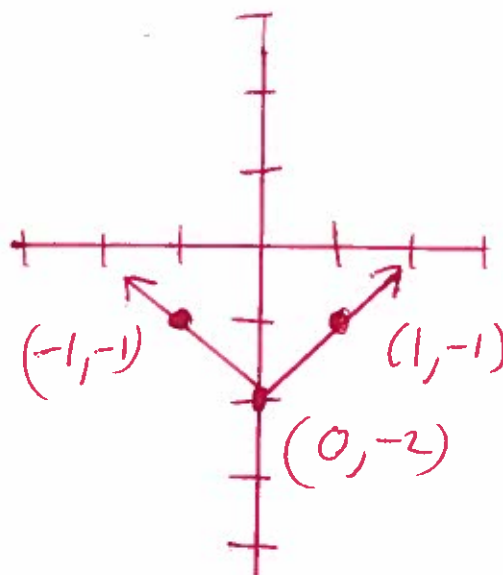
$$y = -2$$

$$y = |1| - 2$$

$$y = 1 - 2$$

$$y = -1$$

x	y
-1	-1
0	-2
1	-1



105 Simplify $\left(\frac{2x}{3y}\right)\left(\frac{9y}{8x^2}\right)$

$$\left(\frac{2x}{3y}\right)\left(\frac{9y}{8x^2}\right) =$$

$$\frac{\cancel{2}x}{\cancel{3}y} \cdot \frac{\cancel{3} \cdot \cancel{3} \cdot \cancel{y}}{2 \cdot 2 \cdot 2 \cdot \cancel{x} x} =$$

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

Factor

$$\begin{array}{r} 3 \overline{) 9} \\ 3 \overline{) 3} \\ 1 \end{array}$$

← $9 = 3 \cdot 3$

Factor

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

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

← $8 = 2 \cdot 2 \cdot 2$

106 Solve $x^3 + 6x^2 + 8x = 0$

$$x^3 + 6x^2 + 8x = 0$$

$$x(x^2 + 6x + 8) = 0$$

$$x(x+2)(x+4) = 0$$

Set $x = 0$ OR $x+2=0$ OR $x+4=0$

$$x+2-2=0-2 \quad \text{OR} \quad x+4-4=0-4$$

$x = -2$ OR $x = -4$

107 Solve $4^3 = 2^k$

$$4^3 = 2^k$$

$$(4)(4)(4) = 2^k$$

$$64 = 2^k$$

$$2^6 = 2^k$$

$$6 = k$$

$$\begin{array}{r} 2 \overline{) 64} \\ 2 \overline{) 32} \\ 2 \overline{) 16} \\ 2 \overline{) 8} \\ 2 \overline{) 4} \\ 2 \overline{) 2} \\ 1 \end{array}$$

108. If a box has 5 red, 3 green, and 4 blue jelly beans then what is the probability of choosing at random a red jelly bean.

$$\frac{\text{red}}{\text{red} + \text{green} + \text{blue}} =$$

$$\frac{5}{5 + 3 + 4} =$$

$$\frac{5}{12}$$

109. If on a map 1 inch equals 10 miles then 30 inches equals how many miles?

$$\frac{1}{10} = \frac{30}{x}$$

$$1(x) = 10(30) \text{ Cross mult}$$

$$1x = 300$$

$$x = 300$$

110 Find $f(\frac{1}{4})$ if $f(x) = \frac{1}{x} + \frac{3}{x}$

$$f(\frac{1}{4}) = \frac{1}{\frac{1}{4}} + \frac{3}{\frac{1}{4}}$$

$$f(\frac{1}{4}) = \frac{1}{\frac{1}{4}} + \frac{\frac{3}{1}}{\frac{1}{4}}$$

$$f(\frac{1}{4}) = \frac{1}{1} \cdot \frac{4}{1} + \frac{3}{1} \cdot \frac{4}{1}$$

$$f(\frac{1}{4}) = \frac{4}{1} + \frac{12}{1}$$

$$f(\frac{1}{4}) = 4 + 12$$

$$f(\frac{1}{4}) = 16$$

111. Solve for x , $\frac{ax-b}{4a-1} = b$

$$\frac{ax-b}{4a-1} = \frac{b}{1}$$

$$1(ax-b) = b(4a-1) \quad \text{cross mult}$$

$$ax-b = 4ab-b$$

$$ax - \cancel{b} + \cancel{b} = 4ab - \cancel{b} + \cancel{b}$$

$$ax = 4ab$$

$$\frac{ax}{a} = \frac{4ab}{a}$$

$$x = 4b$$

(112) If the side of a square is $3x$ and the area is 900 then find x .



$$A = LW$$

$$900 = (3x)(3x)$$

$$900 = 9x^2$$

$$\frac{900}{9} = \frac{9x^2}{9}$$

$$100 = x^2$$

$$\pm\sqrt{100} = \sqrt{x^2}$$

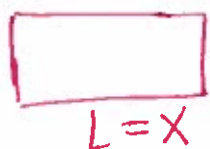
$$\pm 10 = x$$

$$x = 10$$

or

$$x = -10$$

(113) If the perimeter of a rectangle is 160 and the width is 30 then find the area of the rectangle.



$$w = 30 \quad p = 2L + 2w$$

$$160 = 2L + 2(30)$$

$$160 = 2L + 60$$

$$160 - 60 = 2L + \cancel{60} - \cancel{60}$$

$$100 = 2L$$

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

$$50 = L$$

$$w = 30 \text{ and } L = 50$$

$$\text{area} = A = LW$$

$$\text{area} = A = (50)(30)$$

$$\text{area} = A = 1500$$

114) Find $f(8)$ if $f(x) = \frac{\sqrt{x}}{2}$

$$f(8) = \frac{\sqrt{8}}{2}$$

$$f(8) = \frac{\sqrt{4 \times 2}}{2}$$

$$f(8) = \frac{\sqrt{4} \sqrt{2}}{2}$$

$$f(8) = \frac{2\sqrt{2}}{2}$$

$$f(8) = \sqrt{2}$$

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

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



115) Solve $100 = 80 + \frac{x}{2}$

$$100 - 80 = 80 + \frac{x}{2} - 80$$

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

$$\frac{20}{1} = \frac{x}{2}$$

$$2(20) = 1(x) \quad \text{CROSS MULTIPLY}$$

$$40 = 1x$$

$$40 = x$$

116) Solve $\frac{60x}{20} = 18$

$$\frac{60x}{20} = 18$$

$$3x = 18 \quad \text{divide}$$

$$\frac{3x}{3} = \frac{18}{3}$$

$$x = 6$$

117 simplify $\frac{a^6 b^7}{a^2 b^9}$

$$\frac{a^{6-2}}{b^{9-7}} =$$

$$\frac{a^4}{b^2} =$$

118 Solve $x+y=9$
 $3x+4y=28$

$(x+y=9) \quad (-4) \quad \text{Multiply}$
 $(3x+4y=28) \quad (1) \quad \leftarrow$

$$-4x - 4y = -36$$

$$3x + 4y = 28$$

$$-1x = -8$$

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

$$x = 8$$

Subst $x+y=9$

$$(8)+y=9$$

$$8+y-8=9-8$$

$$y=1$$

$$(x, y) = (8, 1)$$

119 Solve $x^2 + 6x - 16 = 0$

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

16.1
2.8
44
possible

69

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

$$x - 2 + 2 = 0 + 2 \text{ OR } x + 8 - 8 = 0 - 8$$

$x = 2$ OR $x = -8$

120. Solve $2(x^2 - 6) = 60$

$$\frac{2(x^2 - 6)}{2} = \frac{60}{2}$$

$$x^2 - 6 = 30$$

$$x^2 - 6 + 6 = 30 + 6$$

$$x^2 = 36$$

$$\sqrt{x^2} = \pm \sqrt{36}$$

$$x = \pm 6$$

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

121. Solve $2(12x^2 + 7x) = 24$

$$\frac{2(12x^2 + 7x)}{2} = \frac{24}{2}$$

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

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

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

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

$$3x + 4 - 4 = 0 - 4 \text{ OR } 4x - 3 + 3 = 0 + 3$$

12.1
3.4
6.6
possible

$$3x = -4 \text{ OR } 4x = 3$$

$$\frac{3x}{3} = \frac{-4}{3} \text{ OR } \frac{4x}{4} = \frac{3}{4}$$

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

(121) Solve $2x + 40 < x$

$$2x + 40 - 40 < x - 40$$

$$2x < x - 40$$

$$2x - x < x - 40 - x$$

$$x < -40$$



(123) If a big hog weighs 8 pounds more than a little hog and 3 times the weight of the little hog equals 2 times the weight of the big hog then find the weight of the little hog.

let x = weight of little hog

let $x + 8$ = weight of big hog

$$3(x) = 2(x + 8)$$

$$3x = 2x + 16$$

$$3x - 2x = 2x + 16 - 2x$$

$$x = 16 \text{ Little hog}$$

124) $x^2 - x = 12$

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

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

12, 1
6, 2
3, 4 possible

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

$$x+3-3=0-3 \text{ or } x-4+4=0+4$$

$x = -3$ or $x = 4$

125) $x^2 - 16 = 6x$

$$x^2 - 6x - 16 = 0$$

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

16, 1
2, 8
4, 4 possible

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

$$x+2-2=0-2 \text{ or } x-8+8=0+8$$

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

126) $x(x-6) = 7$

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

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

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

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

$$x+1-1=0-1 \text{ or } x-7+7=0+7$$

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

7, 1 possible



127. Find a common factor
 $3y^3 + 2y^2$ and $6y^4 + 4y^3$

$$3y^3 + 2y^2 =$$

$$y^2(3y+2) = \text{Factor}$$

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

$$6y^4 + 4y^3 =$$

$$2y^3(3y+2) = \text{Factor}$$

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

thus

$$3y+2$$

is a common factor

128. graph $y = \sqrt{x+2}$

$$y = \sqrt{x+2}$$

$$y = \sqrt{-2+2}$$

$$y = \sqrt{0}$$

$$y = 0$$

X	y
-2	0
2	2
7	3

$$y = \sqrt{x+2}$$

$$y = \sqrt{2+2}$$

$$y = \sqrt{4}$$

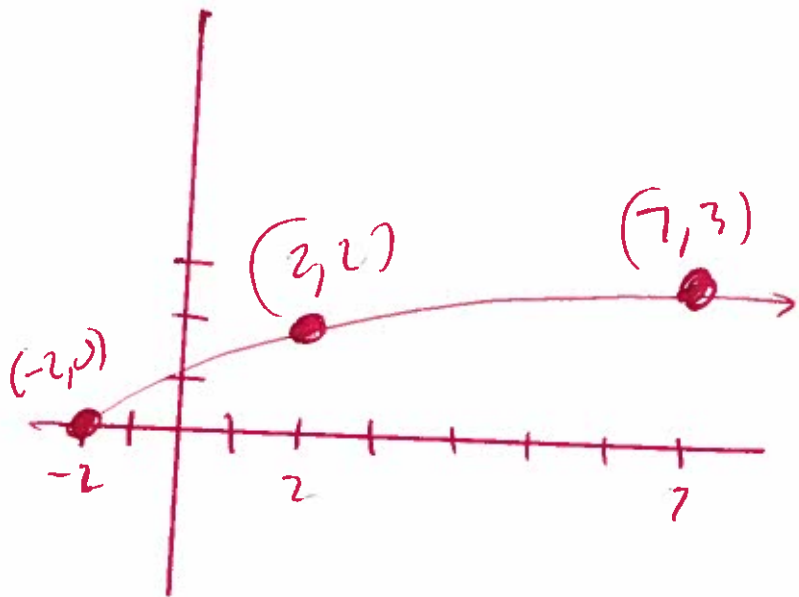
$$y = 2$$

$$y = \sqrt{x+2}$$

$$y = \sqrt{7+2}$$

$$y = \sqrt{9}$$

$$y = 3$$



(129) Find the average of a, b, c, d .

$$a+b+c+d=360$$

$$\frac{a+b+c+d}{4} = \frac{360}{4}$$

$$\frac{a+b+c+d}{4} = 90$$

average

$$\frac{a}{d} \times \frac{b}{c}$$

73

(130) For what value is $f(x) = \frac{x-1}{x^2-4}$ undefined?

$$\text{set } x^2 - 4 = 0$$

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

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

$$\text{or } x+2=0 \text{ or } x-2=0$$

$$x+2-2=0-2 \text{ or } x-2+2=0+2$$

$$x=-2 \text{ or } x=2$$

undefined for $\{-2, 2\}$

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

(131) Solve

$$\begin{aligned} x+3y &= 5 \\ 2x-y &= 3 \end{aligned}$$

$$(x+3y=5) \quad (1) \quad \text{mult}$$

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

$$x+3y=5$$

$$6x-3y=9$$

$$7x=14$$

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

$$x=2$$

$$x+3y=5$$

$$2+3y=5$$

$$3y+2=5-2$$

$$3y=3$$

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

$$y=1$$

$$(x, y) = (2, 1)$$

(132) Find the average of a and b .

$$a + b = 180$$

$$\frac{a+b}{2} = \frac{180}{2}$$

$$\frac{a+b}{2} = 90$$

Average

$$\frac{a/b}{c/d}$$



(133) If point (a, b) is in shaded area then

$$a > 0 \text{ and } b > 0$$

Example $(1, 2)$

$$1 > 0 \text{ and } 2 > 0$$

