

**Geometry H Summer Packet. (After Alg1) Show ALL Work.****Evaluate each expression. Use order of operations.**

1)  $8 \div (3 - 1) + 1 + 6$

2)  $(5 - 4 + 1 + 1) \div 3$

3)  $(6 + 8 \div 2) \times 3 + 1$

4)  $5 + 6 \div (3 - 1 + 4)$

**Simplify each expression. Use Distributive Property and order of operations.**

5)  $-7r + 3(-5r + 4)$

6)  $-7n - 6(n - 7)$

7)  $2r + 10(1 + 3r)$

8)  $2a - 7(3a + 4)$

9)  $10(x - 9) - 2(-5 - 2x)$

10)  $-4(9b - 8) - 2(4 - 5b)$

**Solve each equation.**

$$11) 2(-1 - 3p) = -2p - 2$$

$$12) -(7a + 2) = -6a$$

$$13) 8(3 - x) = 3 - 5x$$

$$14) -4p - (3 - 3p) = 3p - 27$$

**Solve each equation. Remember to create two equations.**

$$15) |-10 + 4a| = 2$$

$$16) |-b + 8| = 3$$

$$17) |p + 8| = 12$$

$$18) |-p + 1| = 8$$

**Solve each inequality.**

$$19) -33 - n \geq 4(n - 2)$$

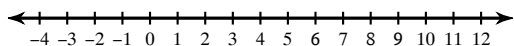
$$20) -2(r + 8) + 4 > -13 - r$$

21)  $4(r - 1) \geq -2r + 32$

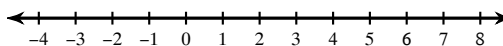
22)  $-(5n + 8) \leq -n + 20$

**Solve each compound inequality and graph its solution. Show work BENEATH number line.**

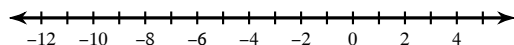
23)  $-7 - r > -17$  and  $7 - 3r < 13$



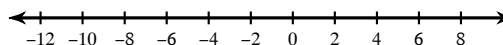
24)  $-2 + 5r \leq 28$  and  $-10r + 9 < 19$



25)  $8x + 9 < -47$  or  $6 - 2x < 2$



26)  $4x - 1 < -29$  or  $5x + 1 > 26$



**Solve each proportion. Cross Multiply!**

27)  $\frac{9}{x + 4} = \frac{6}{x - 2}$

28)  $\frac{9}{a - 2} = \frac{6}{a + 3}$

**Evaluate each function for the given value.**

29)  $f(x) = -2x - 2$ ; Find  $f(-4)$

30)  $f(x) = 4x - 4$ ; Find  $f(-1)$

Find the slope of the line through each pair of points. Use slope formula.

31)  $(13, 10), (13, 12)$

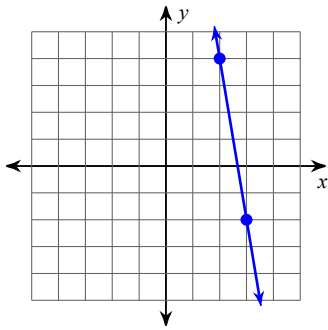
32)  $(10, 15), (12, -12)$

33)  $(15, 12), (-12, 20)$

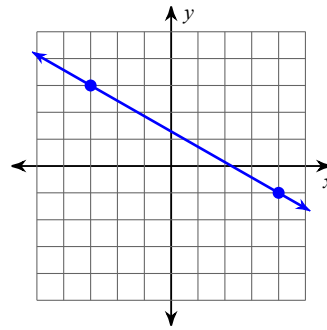
34)  $(5, 7), (10, 7)$

Find the slope of each line. (Rise/Run)

35)

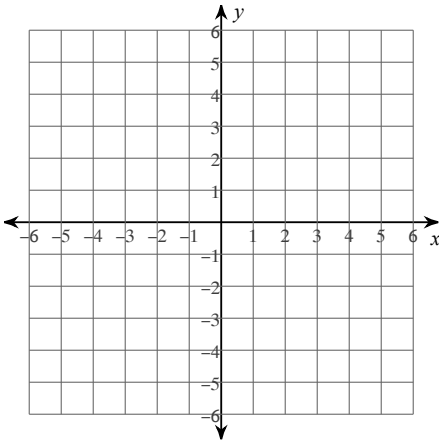


36)

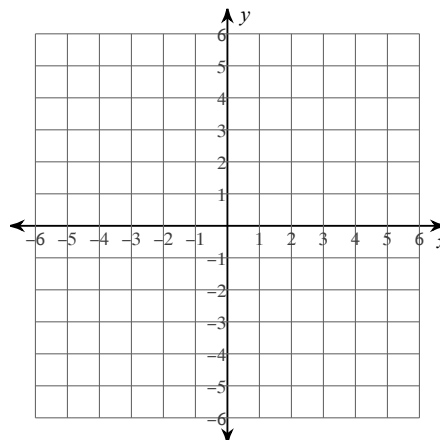


Sketch the graph of each line.

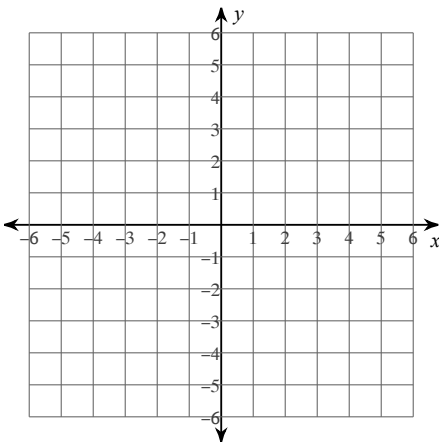
37)  $y = x + 3$



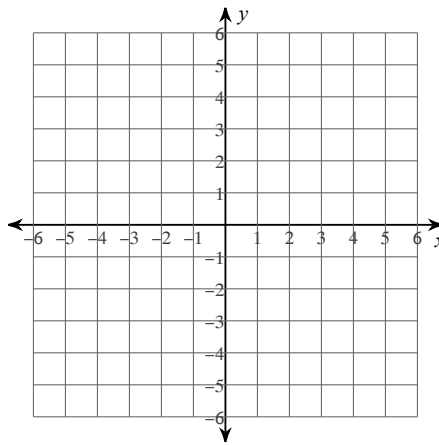
38)  $y = -\frac{2}{3}x - 1$



39)  $y = x - 1$

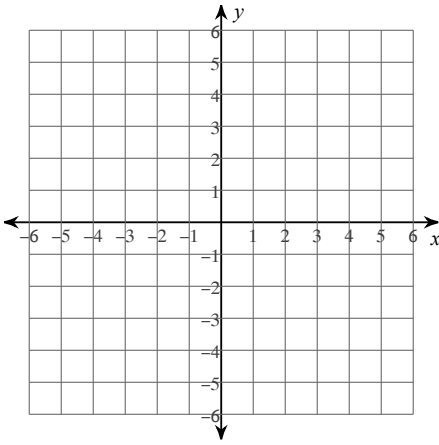


40)  $y = 4x + 3$

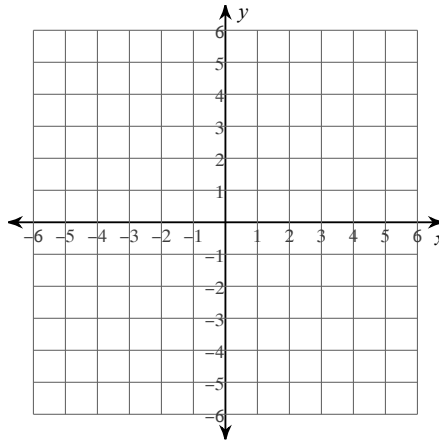


Sketch the graph of each linear inequality.

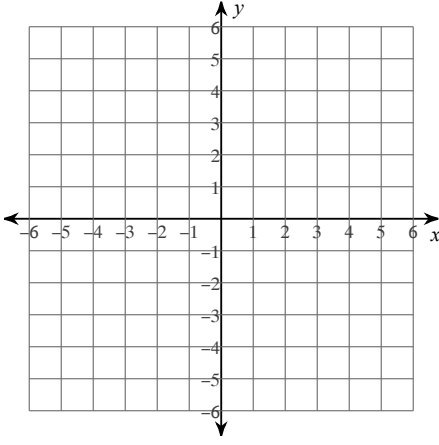
41)  $y > \frac{3}{4}x + 2$



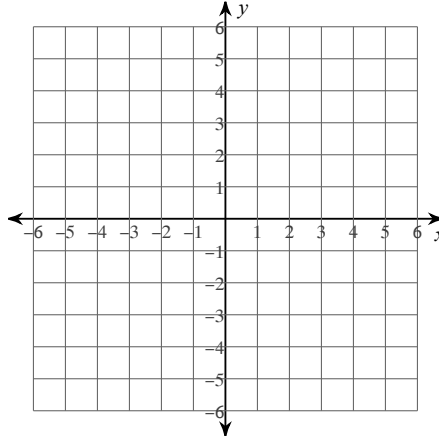
42)  $y < -\frac{5}{2}x - 2$



43)  $y < 4$

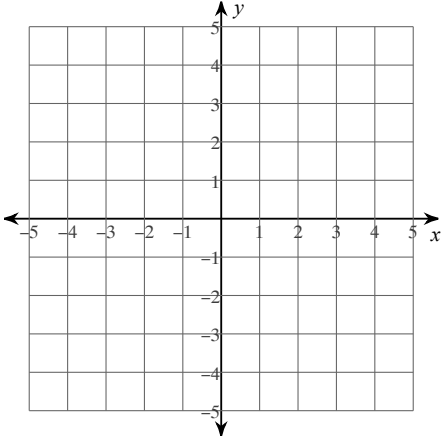


44)  $x < -2$

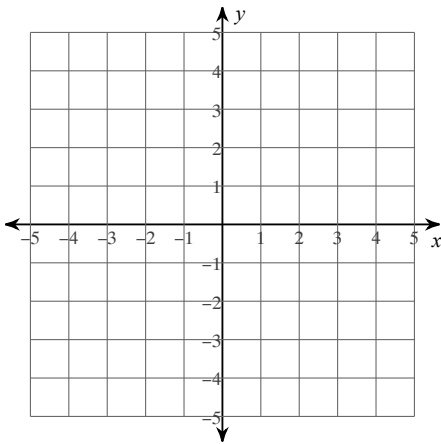


Solve each system by graphing. Give the coordinate of intersection.

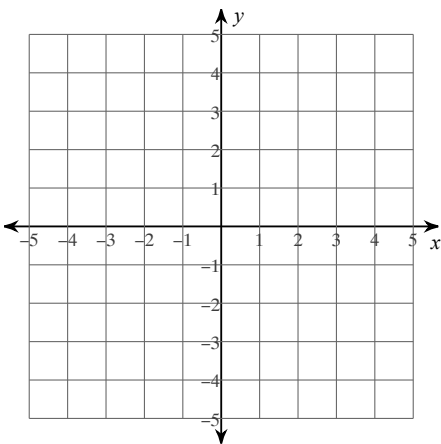
45)  $y = -\frac{2}{3}x + 1$   
 $y = -2x - 3$



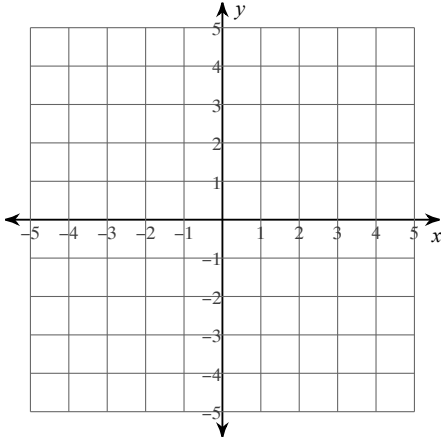
46)  $y = 3x + 2$   
 $y = 3x + 4$



47)  $y = 6x + 3$   
 $y = -x - 4$



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



Solve each system by elimination.

49)  $-3x - 12y = 18$   
 $-6x - 6y = -18$

50)  $3x + 5y = -6$   
 $x - 2y = 20$

**Solve each system by substitution.**

$$51) \begin{aligned} 4x + 3y &= 23 \\ y &= -5x + 15 \end{aligned}$$

$$52) \begin{aligned} 8x + 2y &= 4 \\ y &= -8x + 6 \end{aligned}$$

**Simplify each expression.**

$$53) (4 - 5k^4 + 2k) - (5k - 4k^4 + 3)$$

$$54) (4v^3 - 6v^4 - 3v^2) + (3v - 7v^4 - 5v^3)$$

**Divide.**

$$55) (24n^4 + 6n^3 + 12n^2) \div 6n$$

$$56) (4n^3 + 8n^2 + 3n) \div 4n^2$$

**Find each product.**

$$57) 6x^2(3x^2 - 2x + 8)$$

$$58) 2(6v^2 + 2v - 4)$$

**Find each product. (Binomial x Binomial)**

59)  $(4b - 4)(3b - 4)$

60)  $(7n + 3)(3n - 4)$

61)  $(4x + 5)(7x + 3)$

62)  $(x - 4)(5x - 4)$

**Find each product. (Binomial x Trinomial)**

63)  $(2k + 3)(8k^2 + 8k + 3)$

64)  $(3n - 6)(8n^2 + 8n + 6)$

**Find each product. (Binomial x Binomial)**

65)  $(4n - 2)(4n + 2)$

66)  $(3x - 7)(3x + 7)$

67)  $(2x + 4)(2x - 4)$

68)  $(7a + 5)(7a - 5)$

69)  $(6k - 1)^2$

70)  $(5n + 2)^2$

71)  $(7a + 4)^2$

72)  $(5n - 6)^2$

**Factor the common factor out of each expression.**

73)  $32n^3 - 8n^2 + 16n$

74)  $-12 + 6x^3 + 3x$

75)  $24x^3 - 16x^4 + 24x^5$

76)  $-40p^4 - 30p^3 + 60p^2$

**Factor each completely. Quadratics.**

77)  $b^2 + 4b - 45$

78)  $n^2 - 8n + 16$

79)  $r^2 - 8r + 15$

80)  $n^2 - 14n + 40$

81)  $b^2 - 6b - 27$

82)  $m^2 - 5m - 24$

**Factor each completely. Factor By Grouping.**

83)  $k^3 - 3k^2 - 3k + 9$

84)  $b^3 - 2b^2 - 3b + 6$

85)  $35p^3 - 10p^2 - 14p + 4$

86)  $5p^3 - 35p^2 - 3p + 21$

**Simplify. Use Division By Primes.**

87)  $\sqrt{245}$

88)  $\sqrt{320}$

89)  $\sqrt{252}$

90)  $\sqrt{150}$

91)  $-8\sqrt{245}$

92)  $5\sqrt{128}$

93)  $7\sqrt{75}$

94)  $-7\sqrt{256}$

95)  $2\sqrt{288}$

96)  $5\sqrt{288}$

**Simplify. Your answer should contain only positive exponents.**

97)  $2n^0 \cdot (2m^{-3}n^{-2})^{-1}$

98)  $-x^{-3} \cdot (-yx^{-2})^3$

99)  $(b^4)^4 \cdot (a^{-1}b^{-2})^3$

100)  $(y^4)^4 \cdot 2x^{-4}$

**List the numbers in order. Find the mode, median, and mean for each data set.**

101) Games per World Series  
 7 7 6 7 4 4 7 4  
 6 4 7 4 7 7 6

102) # Words in Book Titles  
 3 1 2 2 3 4 2 1  
 3 1 6 2 1 2 2 5

Classify each angle as acute, obtuse, right, or straight. Right = 90 degrees; Obtuse=greater than 90 degrees; Acute=less than 90 degrees. Striaight = 180 degrees.

103)  $7^\circ$

104)  $9^\circ$

105)  $94^\circ$

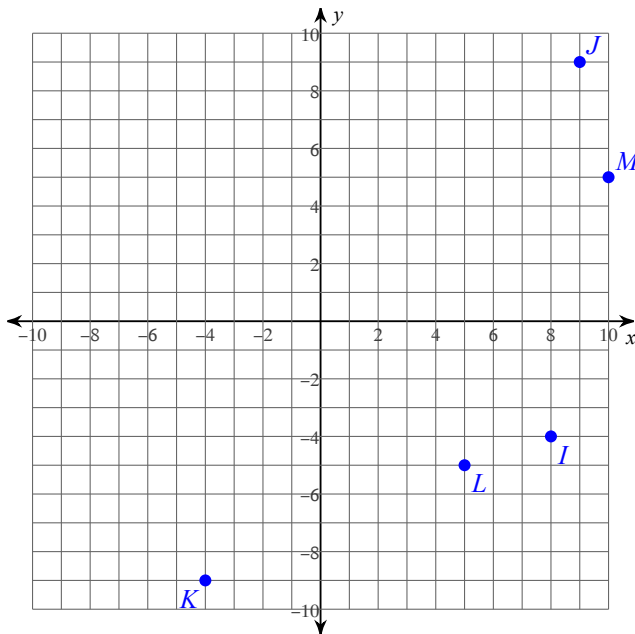
106)  $139^\circ$

107)  $180^\circ$

108)  $90^\circ$

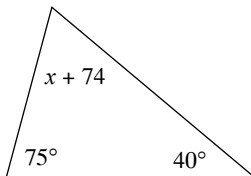
State the coordinates of each point.

109)

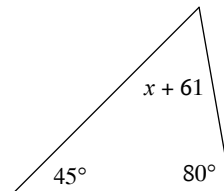


Solve for  $x$ . The sum of the angles of a triangle is 180 degrees.

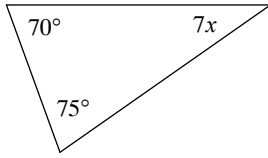
110)



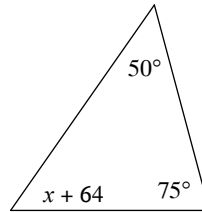
111)



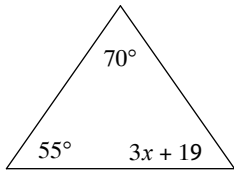
112)



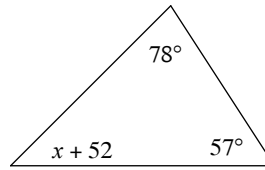
113)



114)

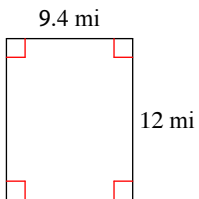


115)

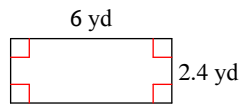


**Find the area of each.  $A = \text{length} \times \text{width}$**

116)

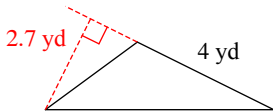


117)

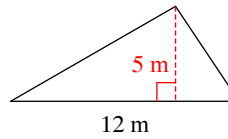


**Find the area of each. Area of a Triangle =  $\frac{1}{2}$  base  $\times$  height.**

118)

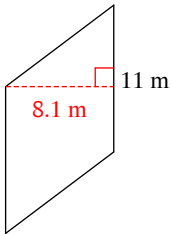


119)

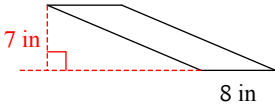


Find the area of each parallelogram. Area = base x height.

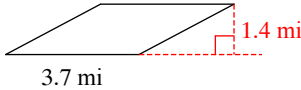
120)



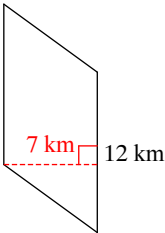
121)



122)

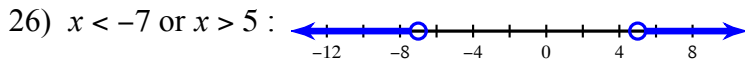
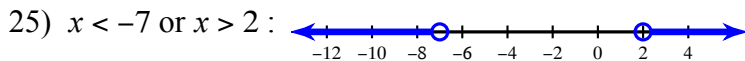
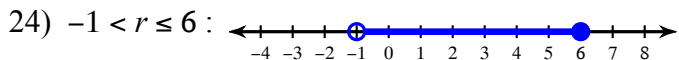
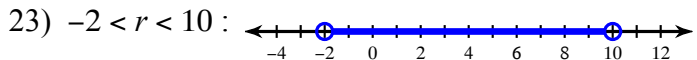


123)



# Answers to Geometry H Summer Packet. (After Alg1) Show ALL Work. (ID: 1)

- |                  |                 |                 |                 |
|------------------|-----------------|-----------------|-----------------|
| 1) 11            | 2) 1            | 3) 31           | 4) 6            |
| 5) $-22r + 12$   | 6) $-13n + 42$  | 7) $32r + 10$   | 8) $-19a - 28$  |
| 9) $14x - 80$    | 10) $-26b + 24$ | 11) $\{0\}$     | 12) $\{-2\}$    |
| 13) $\{7\}$      | 14) $\{6\}$     | 15) $\{3, 2\}$  | 16) $\{5, 11\}$ |
| 17) $\{4, -20\}$ | 18) $\{-7, 9\}$ | 19) $n \leq -5$ | 20) $r < 1$     |
| 21) $r \geq 6$   | 22) $n \geq -7$ |                 |                 |



27)  $\{14\}$

28)  $\{-13\}$

29) 6

30) -8

31) Undefined

32)  $-\frac{27}{2}$

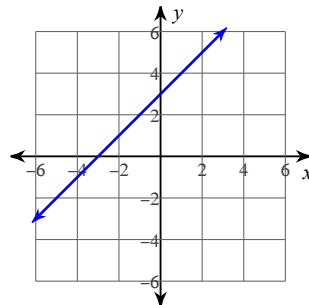
33)  $-\frac{8}{27}$

34) 0

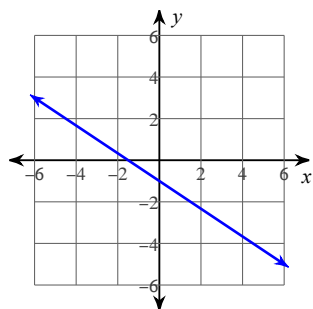
35) -6

36)  $-\frac{4}{7}$

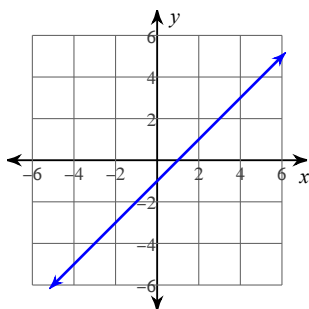
37)



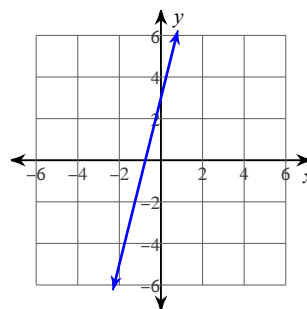
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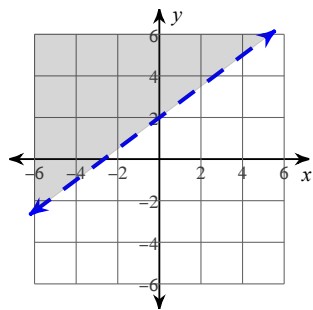
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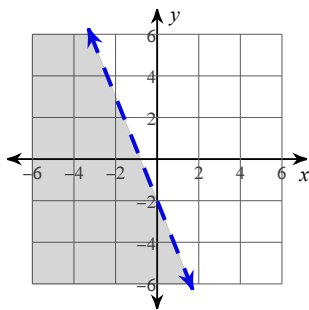
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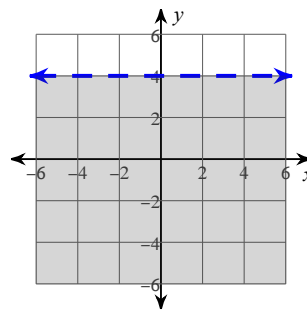
41)



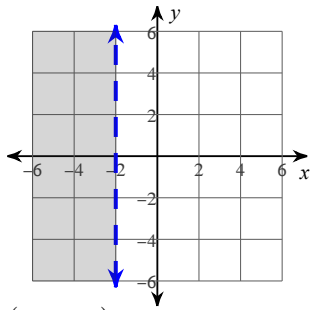
42)



43)



44)

45)  $(-3, 3)$ 

46) No solution

47)  $(-1, -3)$

48)  $(2, -3)$

49)  $(6, -3)$

50)  $(8, -6)$

51)  $(2, 5)$

52)  $(1, -2)$

53)  $-k^4 - 3k + 1$

54)  $-13v^4 - v^3 - 3v^2 + 3v$

55)  $4n^3 + n^2 + 2n$

56)  $n + 2 + \frac{3}{4n}$

57)  $18x^4 - 12x^3 + 48x^2$

58)  $12v^2 + 4v - 8$

59)  $12b^2 - 28b + 16$

60)  $21n^2 - 19n - 12$

61)  $28x^2 + 47x + 15$

62)  $5x^2 - 24x + 16$

63)  $16k^3 + 40k^2 + 30k + 9$

64)  $24n^3 - 24n^2 - 30n - 36$

65)  $16n^2 - 4$

66)  $9x^2 - 49$

67)  $4x^2 - 16$

68)  $49a^2 - 25$

69)  $36k^2 - 12k + 1$

70)  $25n^2 + 20n + 4$

71)  $49a^2 + 56a + 16$

72)  $25n^2 - 60n + 36$

73)  $8n(4n^2 - n + 2)$

74)  $3(-4 + 2x^3 + x)$

75)  $8x^3(3 - 2x + 3x^2)$

76)  $10p^2(-4p^2 - 3p + 6)$

77)  $(b + 9)(b - 5)$

78)  $(n - 4)^2$

79)  $(r - 3)(r - 5)$

80)  $(n - 10)(n - 4)$

81)  $(b - 9)(b + 3)$

82)  $(m - 8)(m + 3)$

83)  $(k^2 - 3)(k - 3)$

84)  $(b^2 - 3)(b - 2)$

85)  $(5p^2 - 2)(7p - 2)$

86)  $(5p^2 - 3)(p - 7)$

87)  $7\sqrt{5}$

88)  $8\sqrt{5}$

89)  $6\sqrt{7}$

90)  $5\sqrt{6}$

91)  $-56\sqrt{5}$

92)  $40\sqrt{2}$

93)  $35\sqrt{3}$

94)  $-112$

95)  $24\sqrt{2}$

96)  $60\sqrt{2}$

97)  $m^3n^2$

98)  $\frac{y^3}{x^9}$

99)  $\frac{b^{10}}{a^3}$

100)  $\frac{2y^{16}}{x^4}$

101) Mode = 7, Median = 6 and  
Mean = 5.8102) Mode = 2, Median = 2 and  
Mean = 2.5

103) acute

104) acute

105) obtuse

106) obtuse

107) straight

108) right

109)  $I(8, -4)$  $J(9, 9)$  $K(-4, -9)$  $L(5, -5)$  $M(10, 5)$ 

110)  $-9$

111)  $-6$

112)  $5$

113)  $-9$

114)  $12$

115)  $-7$

116)  $112.8 \text{ mi}^2$

117)  $14.4 \text{ yd}^2$

118)  $5.4 \text{ yd}^2$

119)  $30 \text{ m}^2$

120)  $89.1 \text{ m}^2$

121)  $56 \text{ in}^2$

122)  $5.18 \text{ mi}^2$

123)  $84 \text{ km}^2$