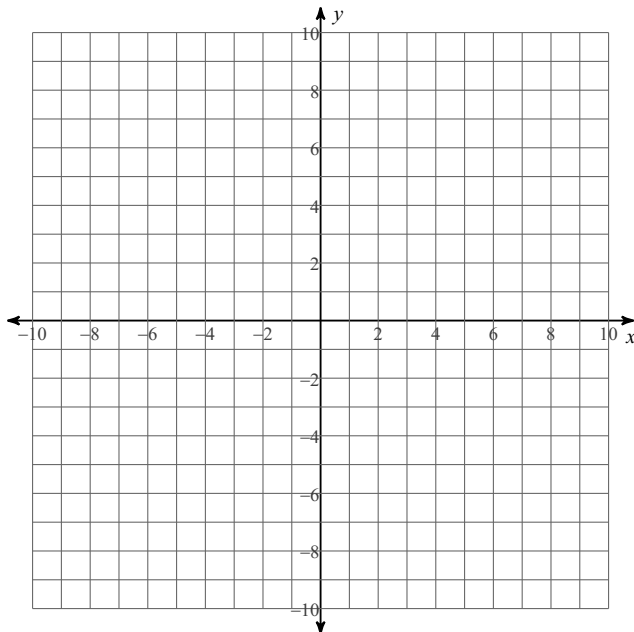
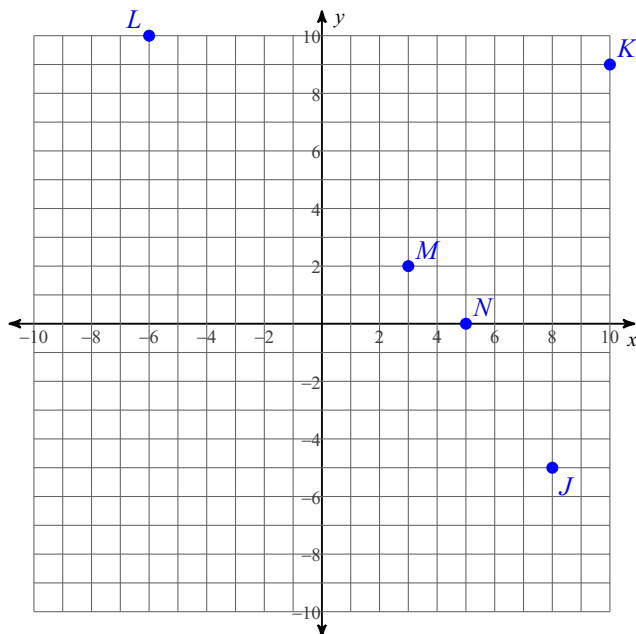


(Incoming) Geometry Summer Review**Plot each point.**

- 1) $H(1, -6)$ $I(-4, 8)$ $J(8, -4)$
 $K(3, 9)$ $L(2, 4)$

**State the coordinates of each point.**

2)

**Write each as an algebraic expression.**

- | | |
|--|---|
| 3) the product of 5 and 12 | 4) 4 to the 2nd |
| 5) 77 divided by 7 | 6) 3 to the n is less than or equal to 17 |
| 7) a number plus 5 is 21 | 8) half of k is greater than 13 |
| 9) a number plus 12 is equal to 29 | |
| 10) the quotient of a number and 6 is less than 48 | |

Evaluate each expression.

11) $4(18 \div (4 - 1) - 1)$

13) $9 \div (2 + 3 - 4 \times 2)$

15) $\left(-\frac{5}{7}\right) - \left(-3\frac{2}{5}\right)$

17) $1\frac{1}{2} + \left(-3\frac{2}{3}\right)$

12) $-5 \times 12 \div (2 \times 2) \times -2$

14) $(10 - -2) \div 3 + 1 - -3$

16) $\left(-2\frac{6}{7}\right) - \left(-4\frac{2}{3}\right)$

18) $\left(-2\frac{5}{7}\right) + \frac{1}{2}$

Evaluate each using the values given.

19) $-3(-8 - (z + x) \div 5) + y$; use $x = 1$, $y = 6$, and $z = -6$

20) $a(a - (a + b \div 4 + b - b))$; use $a = 6$, and $b = 4$

21) $-2(z - y + 6) + zy$; use $y = 4$, and $z = -5$

22) $m(p \div 6 - 2m - p \div 6)$; use $m = -3$, and $p = -6$

Find each product.

23) $-3 \times \frac{1}{3}$

24) $-1\frac{5}{9} \times -\frac{1}{2}$

25) $1\frac{1}{7} \times -\frac{5}{3}$

26) $\frac{1}{8} \times -\frac{6}{7}$

27) $(7k - 3)(k + 7)$

28) $(6k + 5)(6k + 1)$

29) $(2p - 4)(5p + 6)$

30) $(3n - 4)(4n - 4)$

Find each quotient.

31) $\frac{-2}{-\frac{2}{9}}$

32) $\frac{\frac{8}{9}}{-1\frac{3}{5}}$

33) $\frac{1}{3} \div -3\frac{1}{5}$

34) $-3\frac{1}{6} \div 1\frac{1}{10}$

Solve each equation.

35) $-135 = -15n$

36) $-16 = 4 + v$

37) $m - (-7) = 20$

38) $x - 16 = -21$

39) $-12 = 4(p - 2)$

40) $-6 - 5x = -1$

41) $80 = 4(2 + x)$

42) $10(x - 1) = 50$

43) $-7p - 8 = -5p$

44) $-5 + 5p - 7p - 8 = 7 - 7p$

45) $4n - 7(n - 2) = 12 - 2n$

46) $8 - 6n = 8(1 + 8n)$

47) $2(n + 4) = -4(-n + 3)$

48) $-(2 + 5k) + 6k = 2(5 + k)$

Solve each equation for the indicated variable.

49) $z = \frac{ma}{b}$, for a

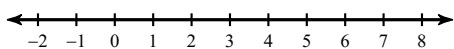
50) $u = b + k - a$, for a

$$51) u = b - \frac{k}{a}, \text{ for } a$$

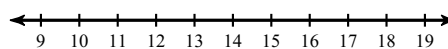
$$52) a + c = r - d, \text{ for } a$$

Solve each inequality and graph its solution.

$$53) 12 \geq 12 - n$$



$$54) 29 > p - (-15)$$



Solve each inequality.

$$55) 7(2k + 1) \leq 105$$

$$56) -5(2x + 8) \geq -90$$

$$57) 2(-5 + 7n) > -3(1 - 7n)$$

$$58) 7 + 2(b + 3) \leq -5(2 - 5b)$$

Solve each proportion.

$$59) \frac{6}{10} = \frac{8}{x}$$

$$60) \frac{x}{6} = \frac{10}{5}$$

$$61) \frac{10}{p + 1} = \frac{8}{6}$$

$$62) \frac{x + 7}{5} = \frac{6}{10}$$

$$63) \frac{m - 8}{m} = \frac{9}{3}$$

$$64) \frac{x - 8}{8} = \frac{x}{7}$$

$$65) \frac{10}{n + 7} = \frac{5}{n + 9}$$

$$66) \frac{x - 9}{x - 1} = \frac{7}{2}$$

Simplify. Your answer should contain only positive exponents.

$$67) 3n^2 \cdot 2n$$

$$68) 2k^3 \cdot k^3$$

$$69) (3x)^3$$

$$70) (3x^3)^3$$

$$71) \frac{2v^2}{2v^3}$$

$$72) \frac{n^3}{2n}$$

$$73) \frac{2k^0 \cdot 2k^3}{k^3}$$

$$74) \left(\frac{x^3}{3x^2 \cdot x^0} \right)^3$$

Solve each system by elimination.

$$75) \begin{aligned} -10x + 7y &= 24 \\ 7x - 7y &= -21 \end{aligned}$$

$$76) \begin{aligned} 4x + y &= 3 \\ -4x - 8y &= 4 \end{aligned}$$

$$77) \begin{aligned} 2x + 10y &= 20 \\ 2x + 5y &= 20 \end{aligned}$$

$$78) \begin{aligned} 3x - 3y &= -6 \\ 10x - 3y &= -13 \end{aligned}$$

$$79) \begin{aligned} -2x + 4y &= 0 \\ 4x - 6y &= 6 \end{aligned}$$

$$80) \begin{aligned} 2x + 4y &= 0 \\ 3x + 12y &= -24 \end{aligned}$$

Solve each system by substitution.

$$81) \begin{aligned} y &= 4x + 13 \\ y &= -2x - 17 \end{aligned}$$

$$82) \begin{aligned} y &= x + 3 \\ y &= 7x - 3 \end{aligned}$$

$$83) \begin{aligned} 7x - 3y &= 10 \\ y &= 5x - 6 \end{aligned}$$

$$84) \begin{aligned} y &= 2x - 5 \\ -7x - y &= 14 \end{aligned}$$

Simplify each sum.

85) $(4x^4 - 7x) + (3 + 3x)$

86) $(m^2 - 7m^3) + (7m^2 - 6m^3)$

Simplify each difference.

87) $(5x^4 - 3x^3) - (4x^4 + 5x^3)$

88) $(2n^4 + 8) - (4 + n^4)$

Simplify each expression.

89) $(6x^4 + 7x^2y) - (4x^4 + 4x^2y)$

90) $(3 + 7n) - (2n - 6)$

91) $-5n(n - 1) + 4n(n - 10)$

92) $2(9p - 1) + 4(2p + 10)$

Factor the common factor out of each expression.

93) $8 + 14x + 20x^2$

94) $36k^4 - 45k + 45$

95) $-8x^4 + 20x^3 + 8x^2$

96) $45m^5 + 9m - 72$

Factor each completely.

97) $r^2 + 11r + 24$

98) $2k^2 + 8k - 90$

99) $r^2 - 10r + 9$

100) $2n^2 - 2n - 84$

101) $x^2 - 8x + 15$

102) $x^2 - 10x + 25$

Find the midpoint of the line segment with the given endpoints.

103) $(-7, 5), (0, 4)$

104) $(8, 10), (6, 3)$

105) $(-4, -10), (-4, 9)$

106) $(-10, -2), (-4, 8)$

Simplify.

107) $\sqrt{12}$

108) $\sqrt{8}$

109) $\sqrt{45}$

110) $\sqrt{32}$

111) $-2\sqrt{8}$

112) $4\sqrt{125}$

113) $5\sqrt{80}$

114) $-2\sqrt{50}$

115) $-2\sqrt{12}$

116) $-3\sqrt{12}$

117) $\frac{\sqrt{5}}{\sqrt{15}}$

118) $\frac{2}{\sqrt{2}}$

119) $\frac{\sqrt{5}}{\sqrt{2}}$

120) $\frac{\sqrt{2}}{\sqrt{3}}$

121) $\frac{-1 + \sqrt{3}}{\sqrt{15}}$

122) $\frac{4 + \sqrt{2}}{\sqrt{2}}$

123) $\frac{2 - \sqrt{2}}{\sqrt{6}}$

124) $\frac{4 + \sqrt{5}}{\sqrt{17}}$

Find the distance between each pair of points.

125) $(2, -1), (-1, -7)$

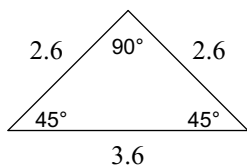
126) $(5, -7), (3, 1)$

127) $(4, -4), (2, 1)$

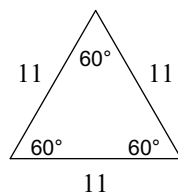
128) $(3, 4), (6, 1)$

Classify each triangle by its sides.

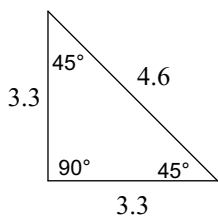
129)



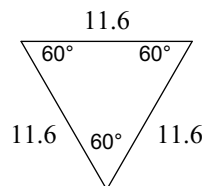
130)



131)

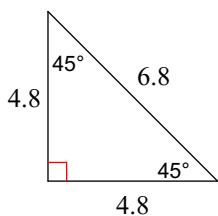


132)

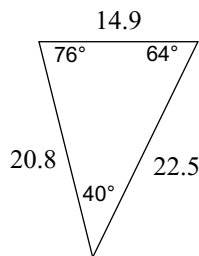


Classify each triangle by its angles.

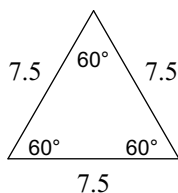
133)



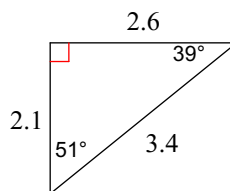
134)



135)

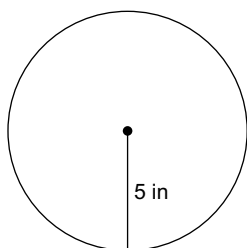


136)

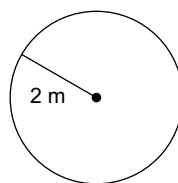


Find the circumference of each circle.

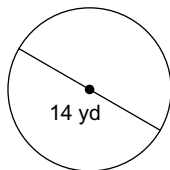
137)



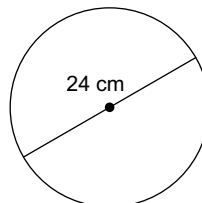
138)



139)

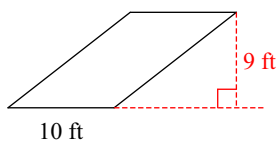


140)

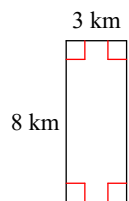


Find the area of each.

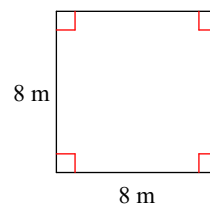
141)



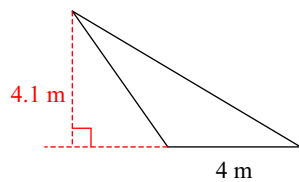
142)



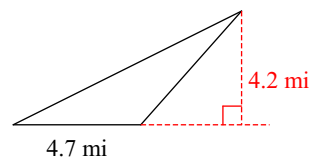
143)



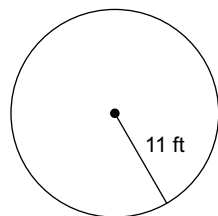
144)



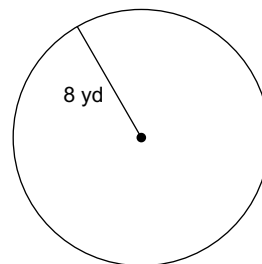
145)



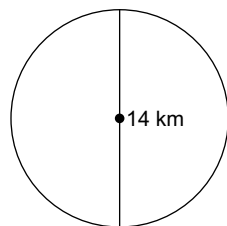
146)



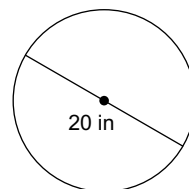
147)



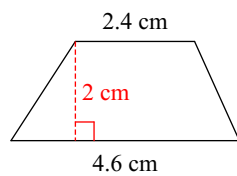
148)



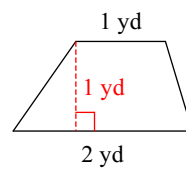
149)



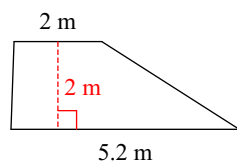
150)



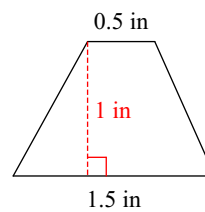
151)



152)



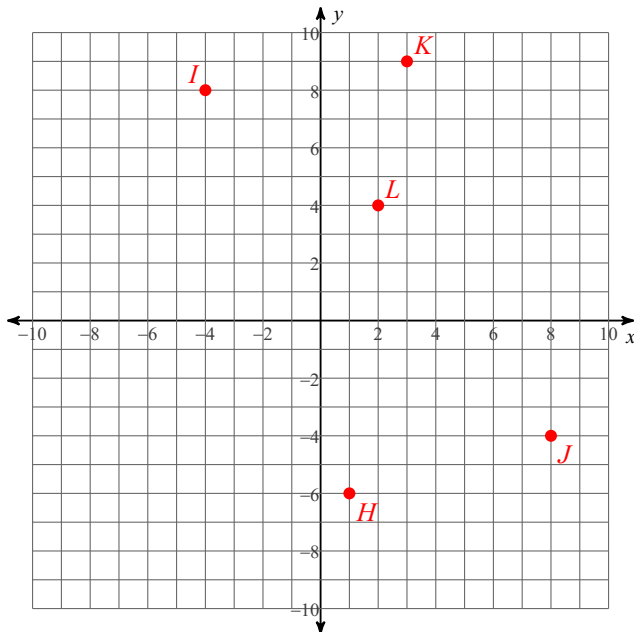
153)



(Incoming) Geometry Summer Review

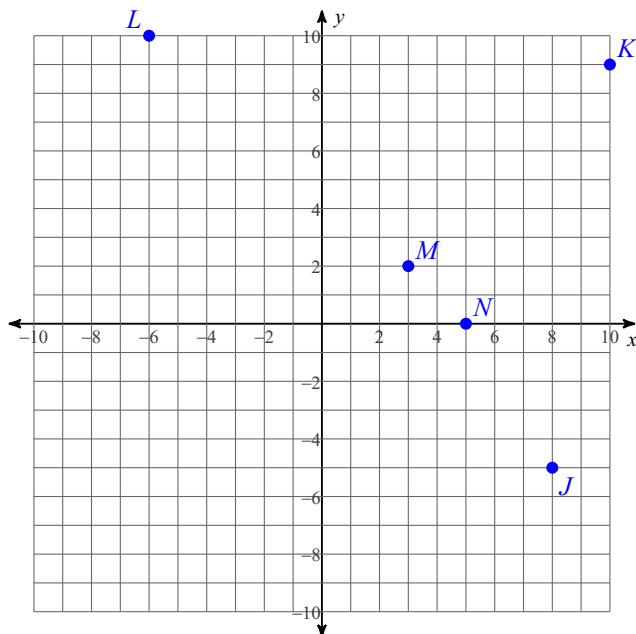
Plot each point.

- 1) $H(1, -6)$ $I(-4, 8)$ $J(8, -4)$
 $K(3, 9)$ $L(2, 4)$



State the coordinates of each point.

- 2) $J(8, -5)$ $K(10, 9)$ $L(-6, 10)$
 $M(3, 2)$ $N(5, 0)$



Write each as an algebraic expression.

- 3) the product of 5 and 12 $5 \cdot 12$
 5) 77 divided by 7 $\frac{77}{7}$
 7) a number plus 5 is 21 $n + 5 = 21$
 9) a number plus 12 is equal to 29 $n + 12 = 29$
 10) the quotient of a number and 6 is less than 48 $\frac{n}{6} < 48$
 4) 4 to the 2nd 4^2
 6) 3 to the n is less than or equal to 17 $3^n \leq 17$
 8) half of k is greater than 13 $\frac{k}{2} > 13$

Evaluate each expression.

11) $4(18 \div (4 - 1) - 1)$ **20**

13) $9 \div (2 + 3 - 4 \times 2)$ **-3**

15) $\left(-\frac{5}{7}\right) - \left(-3\frac{2}{5}\right)$ **$\frac{94}{35}$**

17) $1\frac{1}{2} + \left(-3\frac{2}{3}\right)$ **$-\frac{13}{6}$**

12) $-5 \times 12 \div (2 \times 2) \times -2$ **30**

14) $(10 - -2) \div 3 + 1 - -3$ **8**

16) $\left(-2\frac{6}{7}\right) - \left(-4\frac{2}{3}\right)$ **$\frac{38}{21}$**

18) $\left(-2\frac{5}{7}\right) + \frac{1}{2}$ **$-\frac{31}{14}$**

Evaluate each using the values given.

19) $-3(-8 - (z + x) \div 5) + y$; use $x = 1$, $y = 6$, and $z = -6$ **27**

20) $a(a - (a + b \div 4 + b - b))$; use $a = 6$, and $b = 4$ **-6**

21) $-2(z - y + 6) + zy$; use $y = 4$, and $z = -5$ **-14**

22) $m(p \div 6 - 2m - p \div 6)$; use $m = -3$, and $p = -6$ **-18**

Find each product.

23) $-3 \times \frac{1}{3}$ **-1**

24) $-1\frac{5}{9} \times -\frac{1}{2}$ **$\frac{7}{9}$**

25) $1\frac{1}{7} \times -\frac{5}{3}$ **$-\frac{40}{21}$**

26) $\frac{1}{8} \times -\frac{6}{7}$ **$-\frac{3}{28}$**

27) $(7k - 3)(k + 7)$ **$7k^2 + 46k - 21$**

28) $(6k + 5)(6k + 1)$ **$36k^2 + 36k + 5$**

29) $(2p - 4)(5p + 6)$ **$10p^2 - 8p - 24$**

30) $(3n - 4)(4n - 4)$ **$12n^2 - 28n + 16$**

Find each quotient.

31) $\frac{-2}{-\frac{2}{9}}$ **9**

32) $\frac{\frac{8}{9}}{-1\frac{3}{5}}$ **$-\frac{5}{9}$**

33) $\frac{1}{3} \div -3\frac{1}{5}$ **$-\frac{5}{48}$**

34) $-3\frac{1}{6} \div 1\frac{1}{10}$ **$-\frac{95}{33}$**

Solve each equation.

35) $-135 = -15n$ **{9}**

36) $-16 = 4 + v$ **{-20}**

37) $m - (-7) = 20$ **{13}**

38) $x - 16 = -21$ **{-5}**

39) $-12 = 4(p - 2)$ **{-1}**

40) $-6 - 5x = -1$ **{-1}**

41) $80 = 4(2 + x)$ **{18}**

42) $10(x - 1) = 50$ **{6}**

43) $-7p - 8 = -5p$ **{-4}**

44) $-5 + 5p - 7p - 8 = 7 - 7p$ **{4}**

45) $4n - 7(n - 2) = 12 - 2n$ **{2}**

46) $8 - 6n = 8(1 + 8n)$ **{0}**

47) $2(n + 4) = -4(-n + 3)$ **{10}**

48) $-(2 + 5k) + 6k = 2(5 + k)$ **{-12}**

Solve each equation for the indicated variable.

49) $z = \frac{ma}{b}$, for a **$a = \frac{zb}{m}$**

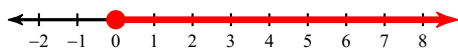
50) $u = b + k - a$, for a **$a = -u + b + k$**

$$51) u = b - \frac{k}{a}, \text{ for } a \quad a = -\frac{k}{u-b}$$

$$52) a + c = r - d, \text{ for } a \quad a = -c + r - d$$

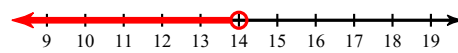
Solve each inequality and graph its solution.

$$53) 12 \geq 12 - n$$



$$n \geq 0$$

$$54) 29 > p - (-15)$$



$$p < 14$$

Solve each inequality.

$$55) 7(2k + 1) \leq 105 \quad k \leq 7$$

$$56) -5(2x + 8) \geq -90 \quad x \leq 5$$

$$57) 2(-5 + 7n) > -3(1 - 7n) \quad n < -1$$

$$58) 7 + 2(b + 3) \leq -5(2 - 5b) \quad b \geq 1$$

Solve each proportion.

$$59) \frac{6}{10} = \frac{8}{x} \quad \{13.33\}$$

$$60) \frac{x}{6} = \frac{10}{5} \quad \{12\}$$

$$61) \frac{10}{p+1} = \frac{8}{6} \quad \{6.5\}$$

$$62) \frac{x+7}{5} = \frac{6}{10} \quad \{-4\}$$

$$63) \frac{m-8}{m} = \frac{9}{3} \quad \{-4\}$$

$$64) \frac{x-8}{8} = \frac{x}{7} \quad \{-56\}$$

$$65) \frac{10}{n+7} = \frac{5}{n+9} \quad \{-11\}$$

$$66) \frac{x-9}{x-1} = \frac{7}{2} \quad \{-2.2\}$$

Simplify. Your answer should contain only positive exponents.

$$67) 3n^2 \cdot 2n \quad 6n^3$$

$$68) 2k^3 \cdot k^3 \quad 2k^6$$

$$69) (3x)^3 \quad 27x^3$$

$$70) (3x^3)^3 \quad 27x^9$$

$$71) \frac{2v^2}{2v^3} \quad \frac{1}{v}$$

$$72) \frac{n^3}{2n} \quad \frac{n^2}{2}$$

$$73) \frac{2k^0 \cdot 2k^3}{k^3} \quad 4$$

$$74) \left(\frac{x^3}{3x^2 \cdot x^0} \right)^3 \quad \frac{x^3}{27}$$

Solve each system by elimination.

$$75) \begin{aligned} -10x + 7y &= 24 \\ 7x - 7y &= -21 \end{aligned} \quad (-1, 2)$$

$$76) \begin{aligned} 4x + y &= 3 \\ -4x - 8y &= 4 \end{aligned} \quad (1, -1)$$

$$77) \begin{aligned} 2x + 10y &= 20 \\ 2x + 5y &= 20 \end{aligned} \quad (10, 0)$$

$$78) \begin{aligned} 3x - 3y &= -6 \\ 10x - 3y &= -13 \end{aligned} \quad (-1, 1)$$

$$79) \begin{aligned} -2x + 4y &= 0 \\ 4x - 6y &= 6 \end{aligned} \quad (6, 3)$$

$$80) \begin{aligned} 2x + 4y &= 0 \\ 3x + 12y &= -24 \end{aligned} \quad (8, -4)$$

Solve each system by substitution.

$$81) \begin{aligned} y &= 4x + 13 \\ y &= -2x - 17 \end{aligned} \quad (-5, -7)$$

$$82) \begin{aligned} y &= x + 3 \\ y &= 7x - 3 \end{aligned} \quad (1, 4)$$

$$83) \begin{aligned} 7x - 3y &= 10 \\ y &= 5x - 6 \end{aligned} \quad (1, -1)$$

$$84) \begin{aligned} y &= 2x - 5 \\ -7x - y &= 14 \end{aligned} \quad (-1, -7)$$

Simplify each sum.

85) $(4x^4 - 7x) + (3 + 3x)$ $4x^4 - 4x + 3$

86) $(m^2 - 7m^3) + (7m^2 - 6m^3)$ $-13m^3 + 8m^2$

Simplify each difference.

87) $(5x^4 - 3x^3) - (4x^4 + 5x^3)$ $x^4 - 8x^3$

88) $(2n^4 + 8) - (4 + n^4)$ $n^4 + 4$

Simplify each expression.

89) $(6x^4 + 7x^2y) - (4x^4 + 4x^2y)$ $2x^4 + 3x^2y$

90) $(3 + 7n) - (2n - 6)$ $5n + 9$

91) $-5n(n - 1) + 4n(n - 10)$ $-n^2 - 35n$

92) $2(9p - 1) + 4(2p + 10)$ $26p + 38$

Factor the common factor out of each expression.

93) $8 + 14x + 20x^2$ $2(4 + 7x + 10x^2)$

94) $36k^4 - 45k + 45$ $9(4k^4 - 5k + 5)$

95) $-8x^4 + 20x^3 + 8x^2$ $4x^2(-2x^2 + 5x + 2)$

96) $45m^5 + 9m - 72$ $9(5m^5 + m - 8)$

Factor each completely.

97) $r^2 + 11r + 24$ $(r + 3)(r + 8)$

98) $2k^2 + 8k - 90$ $2(k - 5)(k + 9)$

99) $r^2 - 10r + 9$ $(r - 1)(r - 9)$

100) $2n^2 - 2n - 84$ $2(n - 7)(n + 6)$

101) $x^2 - 8x + 15$ $(x - 3)(x - 5)$

102) $x^2 - 10x + 25$ $(x - 5)^2$

Find the midpoint of the line segment with the given endpoints.

103) $(-7, 5), (0, 4)$ $\left(-3\frac{1}{2}, 4\frac{1}{2}\right)$

104) $(8, 10), (6, 3)$ $\left(7, 6\frac{1}{2}\right)$

105) $(-4, -10), (-4, 9)$ $\left(-4, -\frac{1}{2}\right)$

106) $(-10, -2), (-4, 8)$ $(-7, 3)$

Simplify.

107) $\sqrt{12}$ $2\sqrt{3}$

108) $\sqrt{8}$ $2\sqrt{2}$

109) $\sqrt{45}$ $3\sqrt{5}$

110) $\sqrt{32}$ $4\sqrt{2}$

111) $-2\sqrt{8}$ $-4\sqrt{2}$

112) $4\sqrt{125}$ $20\sqrt{5}$

113) $5\sqrt{80}$ $20\sqrt{5}$

114) $-2\sqrt{50}$ $-10\sqrt{2}$

115) $-2\sqrt{12}$ $-4\sqrt{3}$

116) $-3\sqrt{12}$ $-6\sqrt{3}$

117) $\frac{\sqrt{5}}{\sqrt{15}}$ $\frac{\sqrt{3}}{3}$

118) $\frac{2}{\sqrt{2}}$ $\sqrt{2}$

119) $\frac{\sqrt{5}}{\sqrt{2}}$ $\frac{\sqrt{10}}{2}$

120) $\frac{\sqrt{2}}{\sqrt{3}}$ $\frac{\sqrt{6}}{3}$

121) $\frac{-1 + \sqrt{3}}{\sqrt{15}}$ $\frac{-\sqrt{15} + 3\sqrt{5}}{15}$

122) $\frac{4 + \sqrt{2}}{\sqrt{2}}$ $2\sqrt{2} + 1$

123) $\frac{2 - \sqrt{2}}{\sqrt{6}}$ $\frac{\sqrt{6} - \sqrt{3}}{3}$

124) $\frac{4 + \sqrt{5}}{\sqrt{17}}$ $\frac{4\sqrt{17} + \sqrt{85}}{17}$

Find the distance between each pair of points.

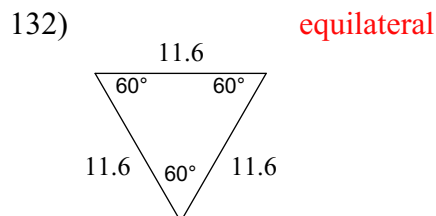
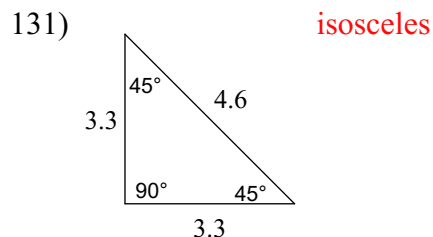
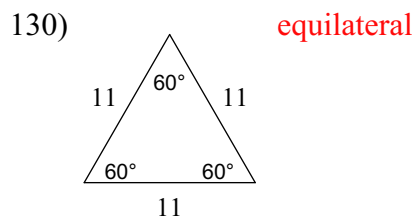
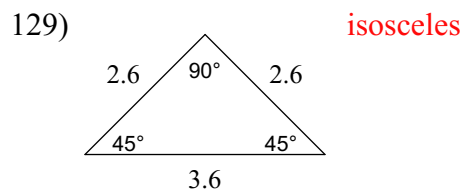
125) $(2, -1), (-1, -7)$ $3\sqrt{5}$

126) $(5, -7), (3, 1)$ $2\sqrt{17}$

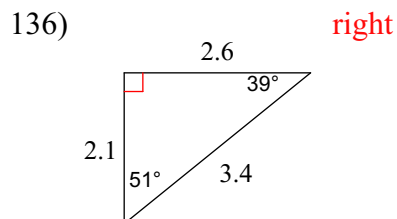
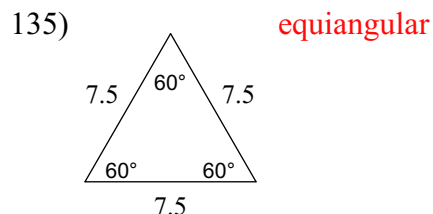
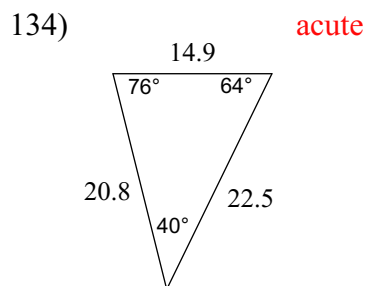
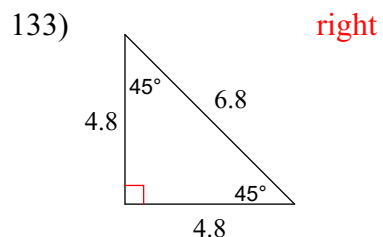
127) $(4, -4), (2, 1)$ $\sqrt{29}$

128) $(3, 4), (6, 1)$ $3\sqrt{2}$

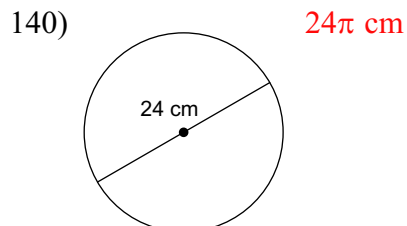
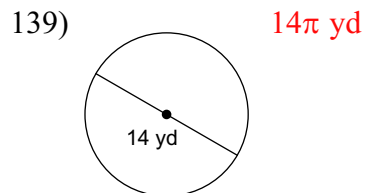
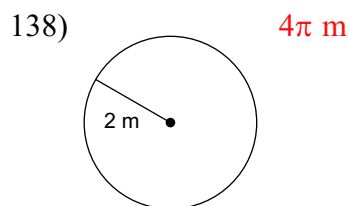
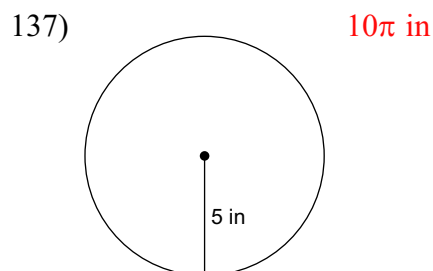
Classify each triangle by its sides.



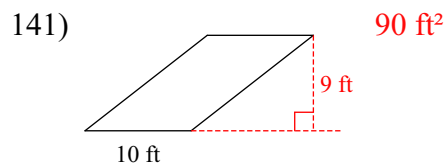
Classify each triangle by its angles.



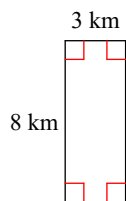
Find the circumference of each circle.



Find the area of each.

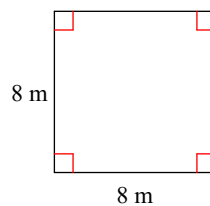


142)



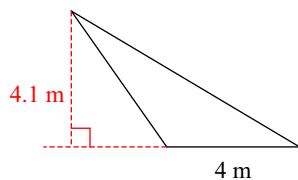
$$24 \text{ km}^2$$

143)



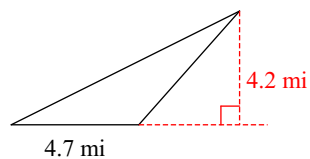
$$64 \text{ m}^2$$

144)



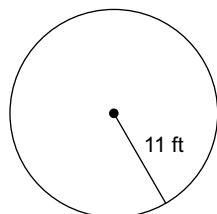
$$8.2 \text{ m}^2$$

145)



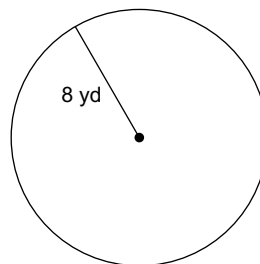
$$9.87 \text{ mi}^2$$

146)



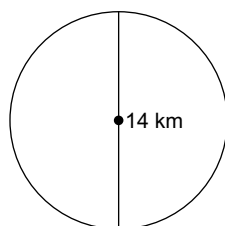
$$121\pi \text{ ft}^2$$

147)



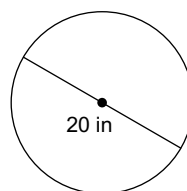
$$64\pi \text{ yd}^2$$

148)



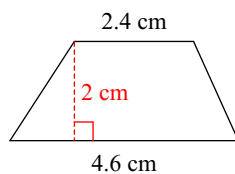
$$49\pi \text{ km}^2$$

149)



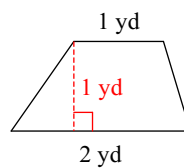
$$100\pi \text{ in}^2$$

150)



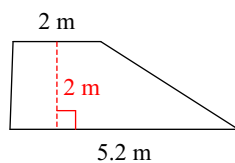
$$7 \text{ cm}^2$$

151)



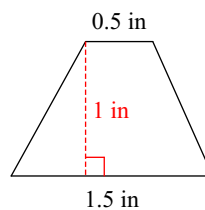
$$1.5 \text{ yd}^2$$

152)



$$7.2 \text{ m}^2$$

153)



$$1 \text{ in}^2$$