

## Summer Practice

**Solve each equation.**

1)  $-7(-10 + 5n) = 385$

2)  $-146 = -5 - 3(8r - 9)$

3)  $-3(4m + 6) = -150$

4)  $143 = -11(1 - 2x)$

5)  $9(-11 - 5x) = 57 + 7x$

6)  $12(x + 1) = 12 + 12x$

7)  $3(n + 2) = 3n - 4$

8)  $-60 + 12n = 9(1 + 9n)$

9)  $5(-4 + 12n) = -5(-11 - 9n)$

10)  $3(x - 10) + 6(x + 4) = 9x - 6$

11)  $-5m - 2(5m - 10) = -3(5m + 3)$

12)  $-8(9 + 2v) = 8(1 - v)$

**Solve each proportion.**

13)  $\frac{x}{8} = \frac{2}{7}$

14)  $\frac{5}{x} = -\frac{10}{4}$

15)  $-\frac{6}{n-10} = \frac{8}{5}$

16)  $\frac{5}{n-6} = \frac{7}{10}$

17)  $-\frac{2}{6} = \frac{n}{7n-1}$

18)  $\frac{5}{n-2} = \frac{8}{6n}$

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

20)  $\frac{x-7}{4} = \frac{x-1}{10}$

**Write the slope-intercept form of the equation of the line through the given points.**

21) through:  $(-3, 2)$  and  $(-4, 5)$

22) through:  $(-4, 5)$  and  $(-4, 3)$

23) through:  $(-5, -1)$  and  $(3, -1)$

24) through:  $(-2, 2)$  and  $(-4, 4)$

25) through:  $(-3, 2)$  and  $(2, -1)$

**Sketch the graph of each line.**

26)  $x = -5$

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

28)  $y = x + 5$

29)  $5x - y = 1$

30)  $y = -4$

31)  $x - 5y = 5$

32)  $0 = y - 1$

33)  $-3 = 3x$

34)  $y - x = -3$

35)  $x$ -intercept = 5,  $y$ -intercept = 1

36)  $x$ -intercept =  $-4$ ,  $y$ -intercept =  $3$

37)  $x$ -intercept =  $3$ ,  $y$ -intercept =  $4$

**Solve each equation by factoring.**

38)  $7x^2 - 7x = 0$

39)  $x^2 - 4x = 0$

40)  $4x^2 - 27x + 35 = 0$

41)  $7a^2 - 19a + 10 = 0$

42)  $6m^2 - 36m + 45 = -3$

43)  $x^2 + 3x - 3 = 7$

44)  $3k^2 - 8k - 4 = -8$

45)  $5a^2 - 14a - 10 = -7$

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

47)  $x^2 = -1 - 2x$

48)  $6p^2 - 5 = -29p$

49)  $5r^2 + 38r = -21$

50)  $-4v^2 - 3v = -v - 5v^2$

51)  $-6a^2 - a - 13 = -7a^2 - 1$

52)  $9a^2 + 21a + 40 = 7a^2$

53)  $28n^2 + 148n - 104 = -8 + 8n^2$

**Solve each equation with the quadratic formula.**

54)  $12x^2 - 9x - 1 = 0$

55)  $-4n^2 - 9n + 133 = 0$

56)  $-k^2 + 6k - 10 = 0$

57)  $-10n^2 - 12n - 15 = -9$

58)  $7x^2 + 5x - 20 = -x - 3$

59)  $2a^2 - 3a = 22$

**Write each expression in radical form.**

60)  $(10x)^{\frac{1}{6}}$

61)  $(10n^3)^{\frac{1}{4}}$

62)  $(3x)^{-\frac{5}{2}}$

63)  $(3m)^{\frac{2}{3}}$

64)  $(5n)^{-\frac{1}{2}}$

**Write each expression in exponential form.**

65)  $\frac{1}{(\sqrt{6m})^5}$

66)  $(\sqrt[3]{6n})^5$

67)  $\sqrt[6]{10a^3}$

68)  $\frac{1}{\sqrt{6x}}$

$$69) \frac{1}{(\sqrt[4]{10k})^5}$$

**Simplify.**

$$70) (64x^6)^{\frac{1}{3}}$$

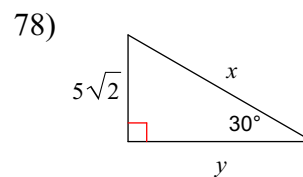
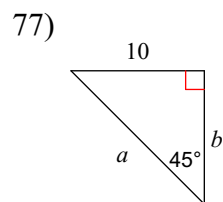
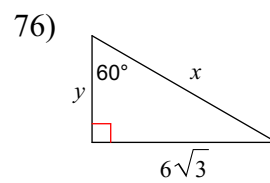
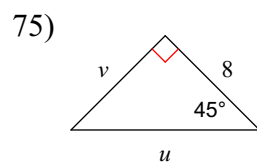
$$71) (36x^4)^{\frac{3}{2}}$$

$$72) (64n^3)^{\frac{4}{3}}$$

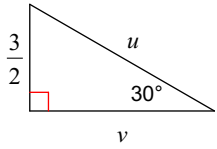
$$73) (216m^6)^{\frac{1}{3}}$$

$$74) (10000x^{12})^{-\frac{1}{4}}$$

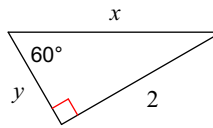
**Find the missing side lengths. Leave your answers as radicals in simplest form.**



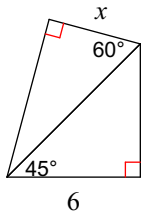
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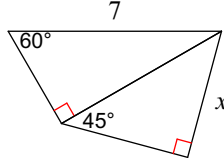
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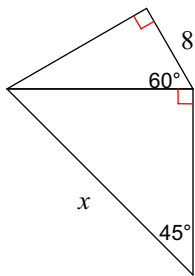
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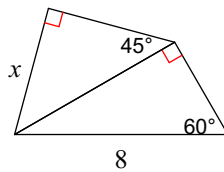
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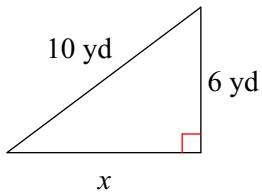


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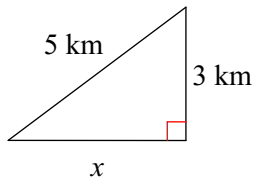


**Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.**

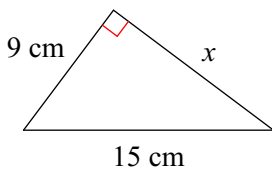
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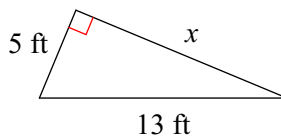
86)



87)



88)



**Find the missing side of each right triangle. Side  $c$  is the hypotenuse. Sides  $a$  and  $b$  are the legs. Leave your answers in simplest radical form.**

89)  $a = 5$  m,  $b = 9$  m

90)  $b = \sqrt{11}$  cm,  $c = \sqrt{14}$  cm

91)  $a = 5$  yd,  $b = 5$  yd

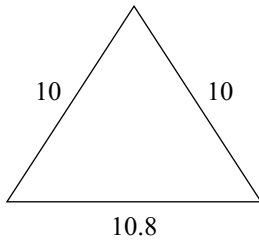
92)  $a = \sqrt{82}$  cm,  $c = 14$  cm

93)  $b = \sqrt{122}$  in,  $c = 12$  in

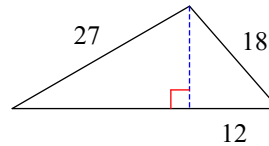
94)  $a = \sqrt{5}$  m,  $c = \sqrt{13}$  m

**Find the area of each triangle. Round intermediate values to the nearest tenth. Use the rounded values to calculate the next value. Round your final answer to the nearest tenth.**

95)



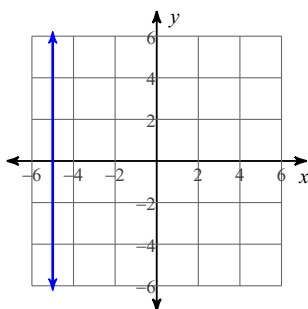
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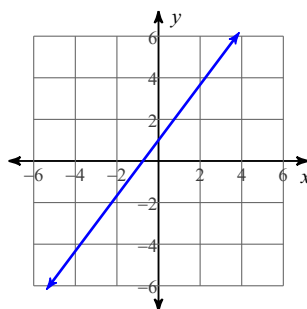
# Answers to Summer Practice

- 1)  $\{-9\}$       2)  $\{7\}$       3)  $\{11\}$       4)  $\{7\}$   
 5)  $\{-3\}$       6)  $\{\text{All real numbers.}\}$       7) No solution.  
 8)  $\{-1\}$       9)  $\{5\}$       10)  $\{\text{All real numbers.}\}$   
 11) No solution.      12)  $\{-10\}$       13)  $\left\{\frac{16}{7}\right\}$       14)  $\{-2\}$   
 15)  $\left\{\frac{25}{4}\right\}$       16)  $\left\{\frac{92}{7}\right\}$       17)  $\left\{\frac{1}{10}\right\}$       18)  $\left\{-\frac{8}{11}\right\}$   
 19)  $\left\{\frac{4}{5}\right\}$       20)  $\{11\}$       21)  $y = -3x - 7$       22)  $x = -4$   
 23)  $y = -1$       24)  $y = -x$       25)  $y = -\frac{3}{5}x + \frac{1}{5}$

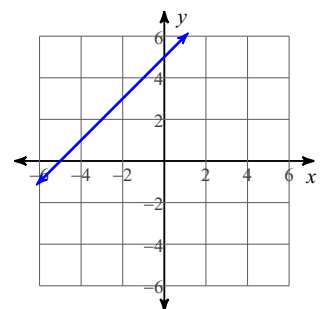
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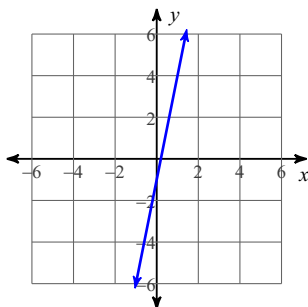
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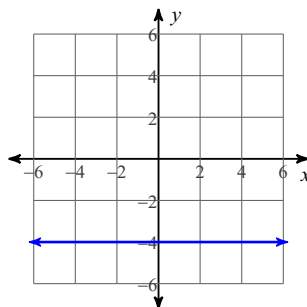
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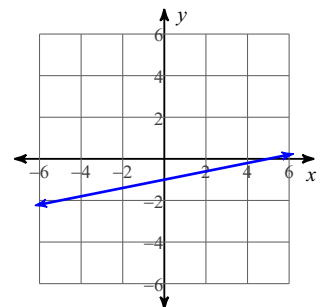
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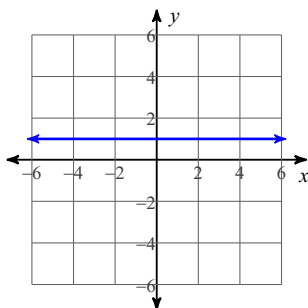
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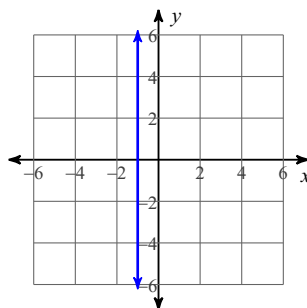
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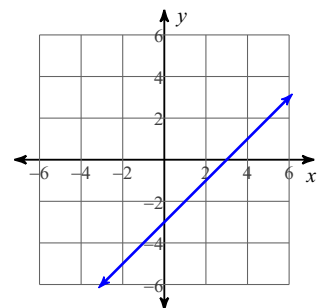
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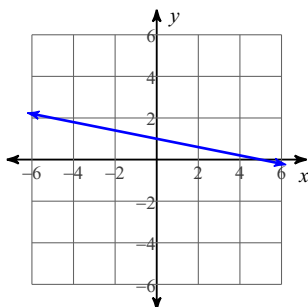
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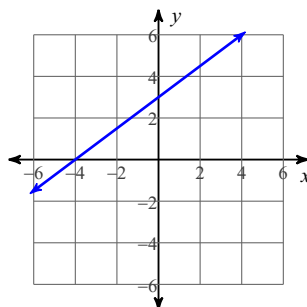
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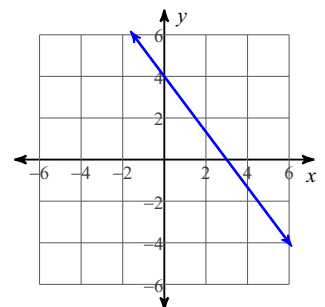
35)



36)



37)



38)  $\{1, 0\}$

39)  $\{4, 0\}$

40)  $\left\{\frac{7}{4}, 5\right\}$

41)  $\left\{\frac{5}{7}, 2\right\}$



- 42)  $\{2, 4\}$                       43)  $\{-5, 2\}$                       44)  $\left\{\frac{2}{3}, 2\right\}$                       45)  $\left\{-\frac{1}{5}, 3\right\}$
- 46)  $\{-2, -4\}$                       47)  $\{-1\}$                       48)  $\left\{\frac{1}{6}, -5\right\}$                       49)  $\left\{-\frac{3}{5}, -7\right\}$
- 50)  $\{2, 0\}$                       51)  $\{4, -3\}$                       52)  $\left\{-\frac{5}{2}, -8\right\}$                       53)  $\left\{\frac{3}{5}, -8\right\}$
- 54)  $\left\{\frac{9 + \sqrt{129}}{24}, \frac{9 - \sqrt{129}}{24}\right\}$                       55)  $\left\{-7, \frac{19}{4}\right\}$                       56)  $\{3 - i, 3 + i\}$
- 57)  $\left\{\frac{-3 - i\sqrt{6}}{5}, \frac{-3 + i\sqrt{6}}{5}\right\}$                       58)  $\left\{\frac{-3 + 8\sqrt{2}}{7}, \frac{-3 - 8\sqrt{2}}{7}\right\}$                       59)  $\left\{\frac{3 + \sqrt{185}}{4}, \frac{3 - \sqrt{185}}{4}\right\}$
- 60)  $\sqrt[6]{10x}$                       61)  $\sqrt[4]{10n^3}$                       62)  $\frac{1}{(\sqrt{3x})^5}$                       63)  $(\sqrt[3]{3m})^2$
- 64)  $\frac{1}{\sqrt{5n}}$                       65)  $(6m)^{-\frac{5}{2}}$                       66)  $(6n)^{\frac{5}{3}}$                       67)  $(10a^3)^{\frac{1}{6}}$
- 68)  $(6x)^{-\frac{1}{2}}$                       69)  $(10k)^{-\frac{5}{4}}$                       70)  $4x^2$                       71)  $216x^6$
- 72)  $256n^4$                       73)  $6m^2$                       74)  $\frac{1}{10x^3}$                       75)  $u = 8\sqrt{2}, v = 8$
- 76)  $x = 12, y = 6$                       77)  $a = 10\sqrt{2}, b = 10$                       78)  $x = 10\sqrt{2}, y = 5\sqrt{6}$
- 79)  $u = 3, v = \frac{3\sqrt{3}}{2}$                       80)  $x = \frac{4\sqrt{3}}{3}, y = \frac{2\sqrt{3}}{3}$                       81)  $3\sqrt{2}$
- 82)  $\frac{7\sqrt{6}}{4}$                       83)  $16\sqrt{2}$                       84)  $2\sqrt{6}$                       85) 8 yd
- 86) 4 km                      87) 12 cm                      88) 12 ft                      89)  $\sqrt{106}$  m
- 90)  $\sqrt{3}$  cm                      91)  $5\sqrt{2}$  yd                      92)  $\sqrt{114}$  cm                      93)  $\sqrt{22}$  in
- 94)  $2\sqrt{2}$  m                      95) 45.4                      96) 237.2