

Evaluate each expression without using a calculator.

(If you are having trouble, try looking up Operations With Fractions)

1) $\left(-1\frac{1}{6}\right) + \left(-\frac{5}{4}\right)$

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

3) $8 + \frac{3}{4}$

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

5) $\left(-\frac{7}{8}\right) - \frac{1}{3}$

6) $-2 \cdot -\frac{3}{2}$

7) $-1\frac{5}{9} \cdot -\frac{2}{3}$

8) $-2\frac{1}{2} \cdot \frac{3}{2}$

9) $-10 \cdot -\frac{14}{9}$

10) $-2\frac{1}{4} \cdot \frac{13}{8}$

11) $\frac{-2}{3} \div \frac{-1}{7}$

12) $1 \div 1\frac{7}{10}$

13) $-1 \div \frac{-17}{9}$

14) $\frac{8}{7} \div -2\frac{3}{4}$

15) $\frac{3}{2} \div 5\frac{1}{9}$

Simplify without a calculator.

(If you are having trouble, try looking up Simplifying Radicals)

16) $\sqrt{147}$

17) $3\sqrt{343}$

18) $\sqrt{72}$

19) $2\sqrt{50}$

Simplify without using a calculator.

(If you are having trouble, try looking up: Multiplying and Dividing Radicals)

20) $\frac{\sqrt{5}}{2\sqrt{3}}$

21) $\frac{5\sqrt{12}}{\sqrt{15}}$

22) $\frac{4\sqrt{2}}{\sqrt{5}}$

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

24) $\sqrt{25} \cdot \sqrt{15}$

25) $\sqrt{10} \cdot -4\sqrt{15}$

26) $\sqrt{6} \cdot -3\sqrt{5}$

27) $\sqrt{15}(\sqrt{10} + 5)$

28) $-4\sqrt{3}(4 + 2\sqrt{3})$

29) $\sqrt{15}(2 - 3\sqrt{6})$

30) $-5\sqrt{15}(-3\sqrt{6} + 2)$

31) $\sqrt{15}(5\sqrt{3} + 5)$

Solve each equation.

(If you are having trouble, try looking up Solving Linear Equations)

32) $-116 = -4(6x + 1) + 8x$

33) $4(5 - 5p) = 120$

34) $-102 = 8 - 5(3x + 7)$

35) $-4(x + 4) = 8(x + 8) - 2x$

36) $-7 + 2(1 - m) = 7(7m - 8)$

37) $7x + 3x = 4(2x + 6) + 2(-3x + 4)$

Solve each equation for the indicated variable.

38) $\frac{c}{a} = d + r$, for a

39) $g = \frac{xc}{y}$, for x

40) $zm = \frac{x + y}{x}$, for x

41) $z = mx + yx$, for x

Solve each equation by factoring.

(If you are having trouble, try looking up Solving Quadratic Equations by Factoring)

42) $p^2 - 6p - 16 = 0$

43) $n^2 + 8n + 12 = 0$

44) $-10 = -3n - n^2$

45) $v^2 = -15 - 8v$

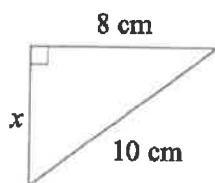
46) $0 = 15x - 14 - 4x^2$

47) $7x^2 + 22x = 24$

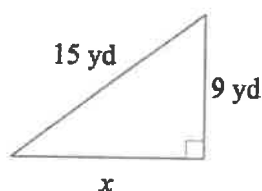
48) $3n^2 + 29n = -56$

**Find the missing side of each triangle. Round your answers to the nearest tenth if necessary.
(If you are having trouble with these, try looking up the Pythagorean Theorem)**

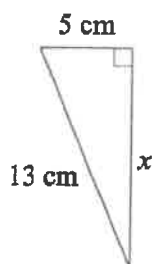
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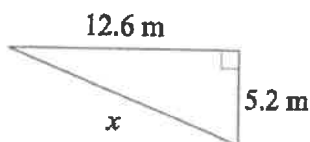
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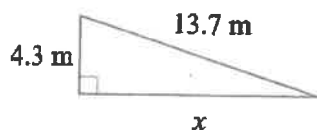
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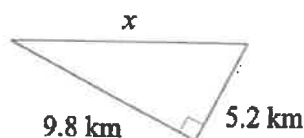
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53)

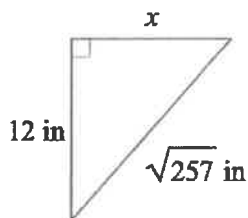


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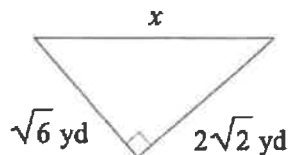


Find the missing side of each triangle. Leave your answers in simplest radical form.

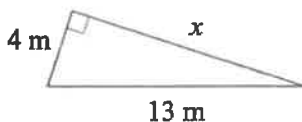
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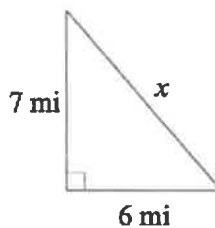
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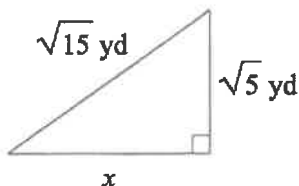
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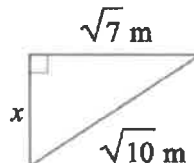
58)



59)



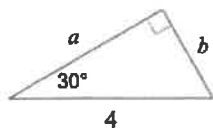
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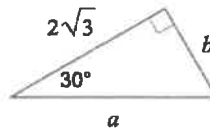
Find the missing side lengths. Leave your answers as radicals in simplest form.

(If you are having trouble with these, try looking up Special Right Triangles. 30-60-90 and 45-45-90)

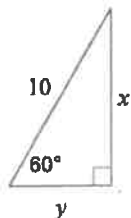
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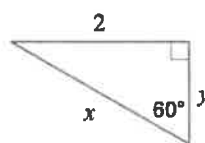
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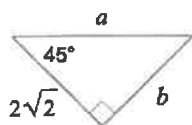
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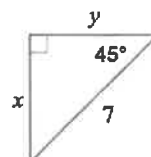
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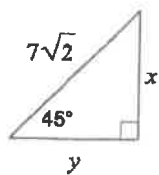
65)



66)



67)



State if the three numbers can be the measures of the sides of a triangle.
(If you are having trouble with these, try looking up: The Triangle Inequality)

68) 6, 2, 6

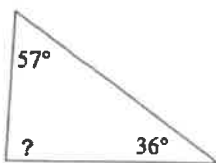
69) 9, 12, 14

70) 16, 6, 7

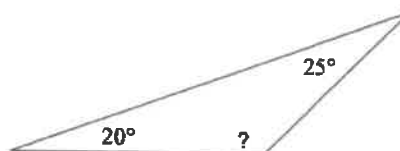
Find the measure of each angle indicated.

(If you are having trouble with these, try looking up the Angle Sum of a Triangle)

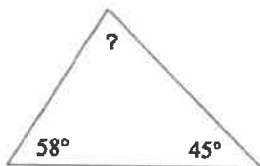
71)



72)

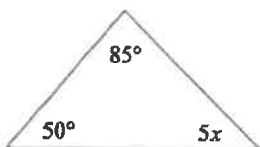


73)

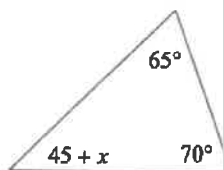


Solve for x .

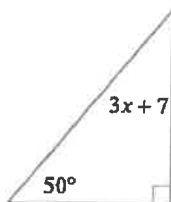
74)



75)



76)

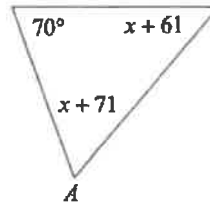


Find the measure of angle A.

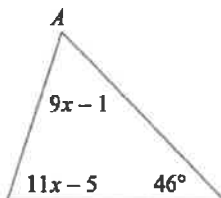
77)



78)



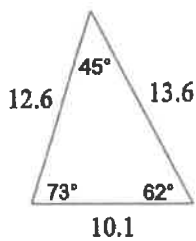
79)



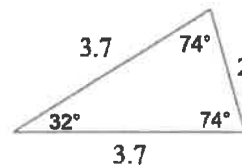
Classify each triangle by its angles and sides.

(If you are having trouble with these, try looking up Classifying Triangles)

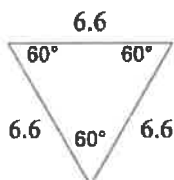
80)



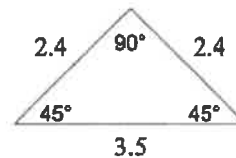
81)



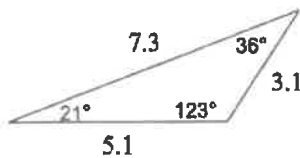
82)



83)

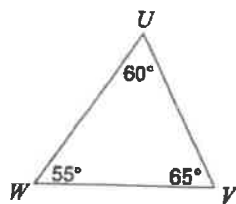


84)

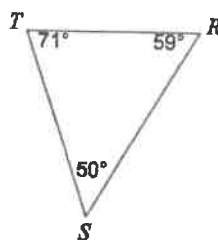


Order the sides of each triangle from shortest to longest.
(If you are having trouble, try looking up Inequalities in one Triangle)

85)

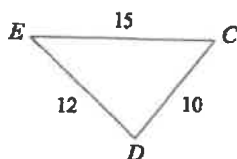


86)

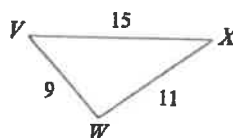


Order the angles in each triangle from smallest to largest.

87)



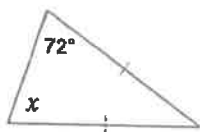
88)



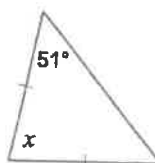
Find the value of x .

(If you are having trouble, try looking up Isosceles and Equilateral Triangles)

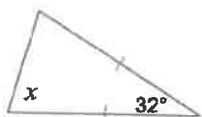
89)



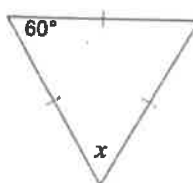
90)



91)



92)



Answers to (ID: 1)

1) $-\frac{29}{12}$

5) $-\frac{29}{24}$

9) $\frac{140}{9}$

13) $\frac{9}{17}$

17) $21\sqrt{7}$

21) $2\sqrt{5}$

25) $-20\sqrt{6}$

29) $2\sqrt{15} - 9\sqrt{10}$

33) $\{-5\}$

37) $\{4\}$

41) $x = \frac{z}{m+y}$

45) $\{-5, -3\}$

49) 6 cm

53) 13 m

57) $3\sqrt{17}$ m

61) $a = 2\sqrt{3}$, $b = 2$

64) $x = \frac{4\sqrt{3}}{3}$, $y = \frac{2\sqrt{3}}{3}$

67) $x = 7$, $y = 7$

71) 87°

75) 0

79) 62°

83) right isosceles

87) $\angle E, \angle C, \angle D$

91) 74°

2) $\frac{1}{6}$

6) 3

10) $-\frac{117}{32}$

14) $-\frac{32}{77}$

18) $6\sqrt{2}$

22) $\frac{4\sqrt{10}}{5}$

26) $-3\sqrt{30}$

30) $45\sqrt{10} - 10\sqrt{15}$

34) $\{5\}$

38) $a = \frac{c}{d+r}$

42) $\{-2, 8\}$

46) $\left\{\frac{7}{4}, 2\right\}$

50) 12 yd

54) 11.1 km

58) $\sqrt{85}$ mi

62) $a = 4$, $b = 2$

65) $a = 4$, $b = 2\sqrt{2}$

68) Yes

72) 135°

76) 11

80) acute scalene

84) obtuse scalene

88) $\angle X, \angle V, \angle W$

92) 60°

3) $\frac{35}{4}$

7) $\frac{28}{27}$

11) $\frac{14}{3}$

15) $\frac{27}{92}$

19) $10\sqrt{2}$

23) $\frac{\sqrt{10}}{2}$

27) $5\sqrt{6} + 5\sqrt{15}$

31) $15\sqrt{5} + 5\sqrt{15}$

35) $\{-8\}$

39) $x = \frac{gy}{c}$

43) $\{-6, -2\}$

47) $\left\{\frac{6}{7}, -4\right\}$

51) 12 cm

55) $\sqrt{113}$ in

59) $\sqrt{10}$ yd

63) $x = 5\sqrt{3}$, $y = 5$

66) $x = \frac{7\sqrt{2}}{2}$, $y = \frac{7\sqrt{2}}{2}$

69) Yes

73) 77°

77) 20°

81) acute isosceles

85) $\overline{UV}, \overline{VW}, \overline{UW}$

89) 72°

4) $-\frac{24}{35}$

8) $-\frac{15}{4}$

12) $\frac{10}{17}$

16) $7\sqrt{3}$

20) $\frac{\sqrt{15}}{6}$

24) $5\sqrt{15}$

28) $-16\sqrt{3} - 24$

32) $\{7\}$

36) $\{1\}$

40) $x = \frac{y}{zm-1}$

44) $\{-5, 2\}$

48) $\left\{-\frac{8}{3}, -7\right\}$

52) 13.6 m

56) $\sqrt{14}$ yd

60) $\sqrt{3}$ m

70) No

74) 9

78) 60°

82) equilateral

86) $\overline{RT}, \overline{ST}, \overline{RS}$

90) 78°