Pre-Algebrea Chapter 10 Review Name Answer Key

$i^2 = -1$

Find each square root.

1. $\sqrt{25}$ $= \pm 5$
2. $\sqrt{-25}$ Not Possible imaginary $(5i)$
3. $\sqrt{169}$ $= 13$
4. $-\sqrt{196}$ $= -14$
5. $\pm\sqrt{16}$ ± 4
6. $\sqrt{-4}$ Not Possible imaginary $(2i)$
7. $\sqrt{400}$ $= 20$
8. $-\sqrt{81}$ $= -9$
9. $\pm\sqrt{225}$ ± 15

Solve each equation. Round to the nearest tenth, if necessary.

1. $\sqrt{x^2} = \sqrt{9}$ $= \pm 3$
2. $t^2 = 25$ $\sqrt{t^2} = \sqrt{25}$ $t = \pm 5$
3. $4h^2 = 144$ $\frac{4h^2}{4} = \frac{144}{4}$ $h^2 = \sqrt{36}$ $\boxed{h = \pm 6}$
4. $16t^2 = 784$ $\frac{16t^2}{16} = \frac{784}{16}$ $\sqrt{t^2} = \sqrt{49}$ $\boxed{t = \pm 7}$
5. $\sqrt{y^2} = \sqrt{30}$ $y \approx \pm 5.4$
6. $4s^2 = 576$ $\frac{4s^2}{4} = \frac{576}{4}$ $s^2 = 144$ $\boxed{s = \pm 12}$
7. $3a^2 = 243$ $\frac{3a^2}{3} = \frac{243}{3}$ $\sqrt{a^2} = \sqrt{81}$ $\boxed{a = \pm 9}$
8. $\sqrt{n^2} = \sqrt{51}$ $n = \pm 7$
9. $5m^2 = 605$ $\frac{5m^2}{5} = \frac{605}{5}$ $\sqrt{m^2} = \sqrt{121}$ $m = \pm 11$
10. $r^2 = 10$ $r \approx \pm 3$
11. $7v^2 = 280$ $\frac{7v^2}{7} = \frac{280}{7}$ $\sqrt{v^2} = \sqrt{40}$ $\boxed{v \approx \pm 6}$
12. $6u^2 = 504$ $\frac{6u^2}{6} = \frac{504}{6}$ $\sqrt{u^2} = \sqrt{84}$ $u \approx \pm 9$

Exercises

Find the value of x in each triangle.

1. 

$180 - 120 = x = \boxed{60°}$

2. 

$180 - (36 + 42)$
$180 - 78 = 102$
$\boxed{x = 102°}$

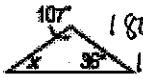
Find the value of x in each triangle. Then classify each triangle by its angles and by its sides.

7. 

$180 - (58 + 73)$
$180 - 131$
$x = 49°$
Acute
Scalen

8. 

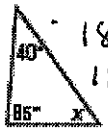
$180 - (90 + 45)$
$180 - 135 =$
$x = 45°$
isosceles
right

9. 

$180 - (107 + 36)$
$180 - 143$
$x = 37°$
obtuse
scale

10. 

$x = 60°$
acute
equilateral

11. 

$180 - (95 + 40)$
$180 - 135$
$x = 56°$
acute
scalene

12. 

$180 - (48 + 75)$
$180 - 123$
$x = 57°$
acute
scalene

The lengths of three sides of a triangle are given. Determine whether each triangle is a right triangle.

1. $a = 8, b = 15, c = 17$

$8^2 + 15^2 = 17^2$

$64 + 225 = 289$

$289 = 289$

$\boxed{\text{YES!}}$

2. $a = 5, b = 12, c = 13$

$5^2 + 12^2 = 13^2$

$25 + 144 = 169$

$169 = 169$

$\boxed{\text{YES!}}$

If c is the measure of the hypotenuse, find each missing measure. Round to the nearest tenth, if necessary.

7. $a = ?, b = 24, c = 26$

$a^2 + 24^2 = 26^2$

$a^2 + 576 = 676$

$\sqrt{a^2} = \sqrt{100}$

$\boxed{a = 10}$

8. $a = 16, b = ?, c = 34$

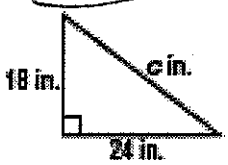
$16^2 + b^2 = 34^2$

$256 + b^2 = 1156$

$\sqrt{b^2} = \sqrt{900}$

$\boxed{b = 30}$

1.



$18^2 + 24^2 = c^2$

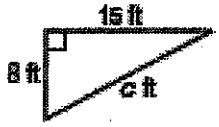
$324 + 576 = c^2$

$\sqrt{900} = \sqrt{c^2}$

$30 = c$

$\boxed{30 \text{ inches} = c}$

2.



$c^2 = 8^2 + 15^2$

$c^2 = 64 + 225$

$\sqrt{c^2} = \sqrt{289}$

$\boxed{c = 17 \text{ feet}}$

Find the distance between each pair of points. Round to the nearest tenth, if necessary.

1. $A(5, 2), B(3, 4)$

$\overline{AB} = \sqrt{(x_2 - x_1) + (y_2 - y_1)}$

$\overline{AB} = \sqrt{(5-3)^2 + (2-4)^2}$

$\overline{AB} = \sqrt{2^2 + (-2)^2}$

$\overline{AB} = \sqrt{4+4}$

$\overline{AB} = \sqrt{8}$

$\boxed{\overline{AB} = 2.8}$

2. $C(-2, -4), D(1, 3)$

$\overline{CD} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

$\overline{CD} = \sqrt{(-2-1)^2 + (-4-3)^2}$

$\overline{CD} = \sqrt{(-3)^2 + (-7)^2}$

$\overline{CD} = \sqrt{9 + 49}$

$\overline{CD} = \sqrt{58}$

$\overline{CD} = 7.6$

GEOMETRY The coordinates of the vertices of a triangle are given. Find the perimeter of each triangle. Round to the nearest tenth, if necessary.

21. $J(4, 5), K(-2, 2)$, and $L(-4, 4)$

$\overline{JK} = \sqrt{(4+(-2))^2 + (5-2)^2}$

$\overline{JK} = \sqrt{6^2 + 3^2}$

$\overline{JK} = \sqrt{36+9}$

$\overline{JK} = \sqrt{45}$

$\overline{JK} = 6.7$

$\overline{KL} = \sqrt{(-2+(-4))^2 + (2-4)^2}$

$\overline{KL} \sqrt{2^2 + (-2)^2}$

$\overline{KL} = \sqrt{4+4}$

$\overline{KL} = \sqrt{8}$

$\overline{KL} = 2.8$

$\overline{JL} = \sqrt{(4+(-4))^2 + (5-4)^2}$

$\overline{JL} = \sqrt{8^2 + 1^2}$

$\overline{JL} = \sqrt{64+1}$

$\overline{JL} = \sqrt{65}$ $\overline{JL} = 8.1$

$P = 6.7 + 2.8 + 8.1$

$\boxed{P = 17.6}$

22. $E(3, 5), F(4, 8)$, and $G(-1, 6)$

$\overline{EF} = \sqrt{(3-4)^2 + (5-8)^2}$

$\overline{EF} = \sqrt{-1^2 + (-3)^2}$

$\overline{EF} = \sqrt{1+9}$

$\overline{EF} = \sqrt{10}$

$\overline{EF} \approx 3.2$

$\overline{FG} = \sqrt{(4+1)^2 + (8-6)^2}$

$\overline{FG} = \sqrt{5^2 + 2^2}$

$\overline{FG} = \sqrt{25+4}$

$\overline{FG} = \sqrt{29}$

$\overline{FG} = 5.4$

$\overline{EG} = \sqrt{(3+1)^2 + (5-6)^2}$

$\overline{EG} = \sqrt{4^2 + (-1)^2}$

$\overline{EG} = \sqrt{16+1}$

$\overline{EG} = \sqrt{17}$

$\overline{EG} = 4.1$

$P = 3.2 + 4.1 + 5.4$

$\boxed{P = 12.7}$