Geometry   Name:_____

Assignment 7.3

1. For a 45°-45°-90° triangle, the leg times _____ is equal to the hypotenuse.

2. For a 30°-60°-90° triangle, the short leg times _____ is equal to the long leg.

3. For a 30°-60°-90° triangle, the short leg times _____ is equal to the hypotenuse.

4. The short leg is opposite of the _____ angle and the long leg is opposite of the _____ angle.

5. Getting a fraction to NOT have a denominator that is a radical is called

_____.

6. A regular polygon is both _____ and _____.

7. The height of a triangle can also be referred to as the _____.

8. A segment that joins two non-adjacent vertices of a polygon is called a _____.
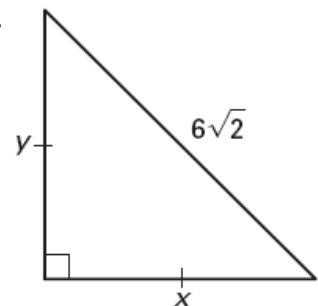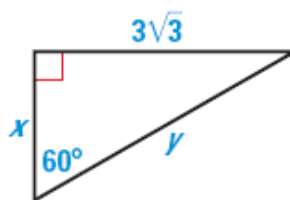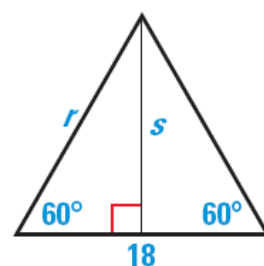
Find the value of the variable(s).

9.
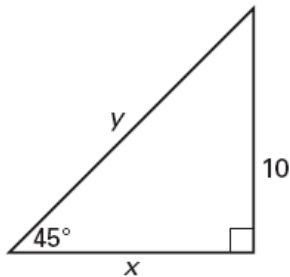
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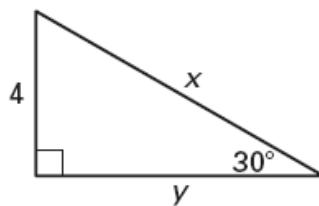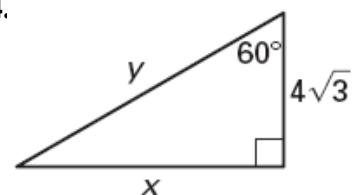

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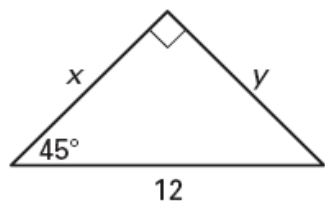
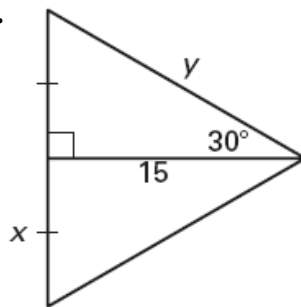

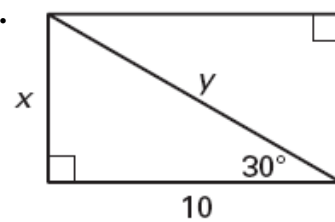**12.**

13.

14.

15.

16.

17.

18. The side length of an equilateral triangle is 20 centimeters. Find the area of the triangle.

19. The perimeter of a square is 20 feet. Find the length of a diagonal.

20. The altitude (height) of an equilateral triangle is 18 inches. Find the length of a side.

21. The diagonal of a square is 8 yards. Find its area.

Classify a triangle with the given side lengths as right, acute, or obtuse
for problems 22 and 23. The side lengths are listed from smallest to largest.   Find the value of x.
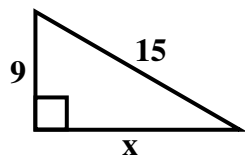
22. 7,8,11

23. $3\sqrt{2}, \sqrt{31}, 7$

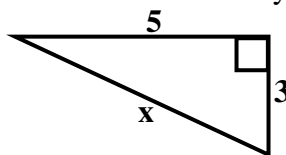**24.** $x\sqrt{3}, 3x, 12;$ acute

Find the missing length of the right triangle. **Reminder:** Sometimes you can apply Pythogorean Triples.

25.
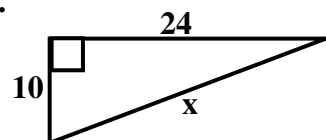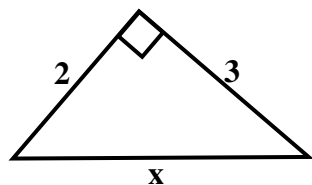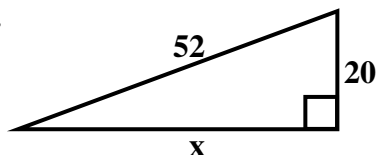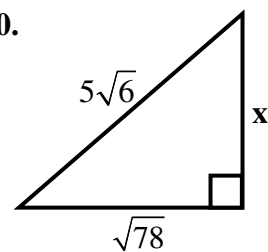

9

15

x

26.

5

3

x

27.

24

10

x

28.

2

3

x

29.

52

20

x

30.

$5\sqrt{6}$

x

$\sqrt{78}$

31. Find the area of the triangle.
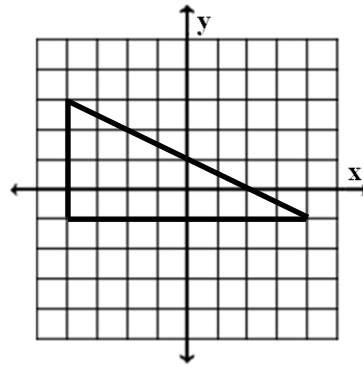

13 ft
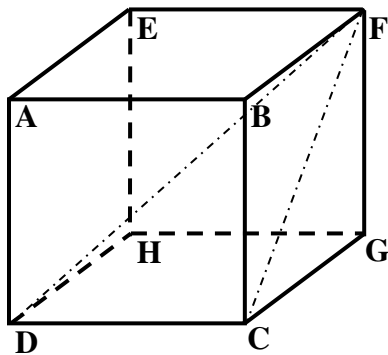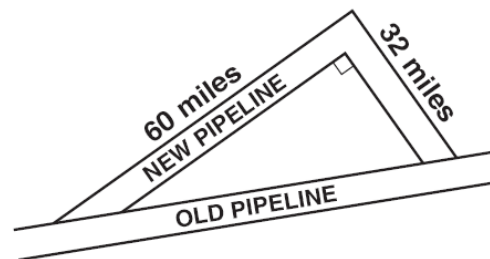
10 ft

13 ft
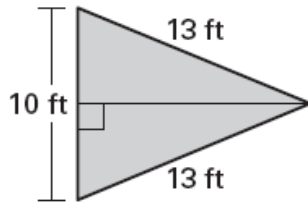
32. Find the length of the hypotenuse of the triangle.

33. The figure below is a cube with side lengths 3 units. Find FC and FD.

34. A new pipeline is being constructed to re-route Its oil flow around the exterior of a national wildlife preserve. The plan showing the old pipeline and the new route is shown below.

60 miles
NEW PIPELINE
OLD PIPELINE
32 miles

About how many extra miles will the oil flow once the new route is established?

Answer Key:

1) $\sqrt{2}$ 2) $\sqrt{3}$ 3) 2   4) 30°, 60°   5) rationalizing the denominator   6) equilateral, equiangular

7) altitude   8) diagonal   9) $x = 10, y = 10\sqrt{2}$ 10) $x = 8, y = 4\sqrt{3}$ 11) $x = 6, y = 6$ 12) $x = 3, y = 6$

13) $r = 18, s = 9\sqrt{3}$ 14) $x = 12, y = 8\sqrt{3}$ 15) $x = 6\sqrt{2}, y = 6\sqrt{2}$ 16) $x = 5\sqrt{3}, y = 10\sqrt{3}$

17) $x = \dfrac{10\sqrt{3}}{3}, y = \dfrac{20\sqrt{3}}{3}$ 18) $A = 100\sqrt{3}$ cm²   19) $d = 5\sqrt{2}$ ft   20) $12\sqrt{3}$ in.   21) $A = 32$ yd²

22) Obtuse   23) Right   24) $x > 2\sqrt{3}$ 25) $x = 12$ 26) $x = \sqrt{34}$ 27) $x = 26$ 28) $x = \sqrt{13}$

29) $x = 48$ 30) $x = 6\sqrt{2}$ 31) $A = 60$ ft²   32) $4\sqrt{5}$ units   33) $FC = 3\sqrt{2}, FD = 3\sqrt{3}$ 34) 24 miles