

**Pythagorean Theorem Converse and Inequalities Assignment**

Determine if a triangle can be formed with the given lengths. If so, classify the triangle by angles.

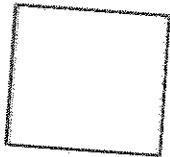
1.  $2\sqrt{5}, 2\sqrt{5}, 2\sqrt{10}$  YES or NO Classify:

2.  $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}$  YES or NO Classify:

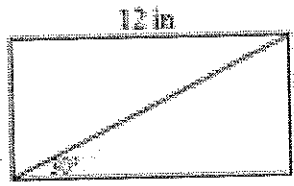
3. 8, 8, 8 YES or NO Classify:

4.  $\sqrt{10}, \sqrt{15}, 2\sqrt{5}$  YES or NO Classify:

Square: Find the side  
If the diagonal is  $5\sqrt{10}$

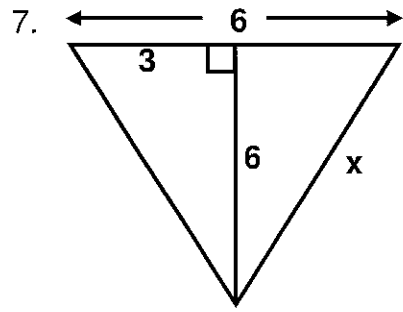


5. Find the diagonal length



STOP WORK!!

Find the indicated length.



8. A rectangle has a diagonal of 2 and a length of  $\sqrt{3}$ . Find its width.

9. Find the length of a diagonal of a square with perimeter 16.

10. If you had a 20 ft ladder, how far away from a building would you have to place the bottom to reach a window 15 feet up?

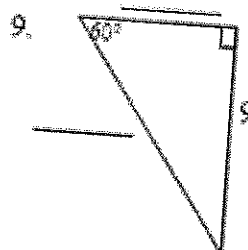
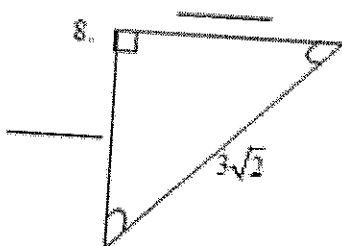
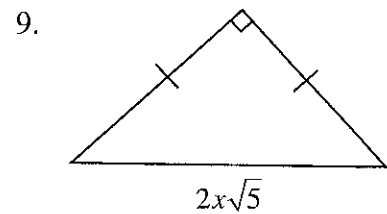
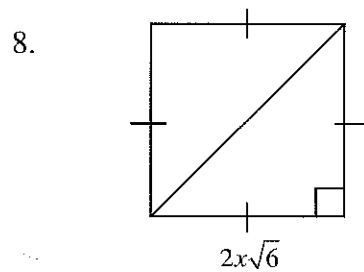
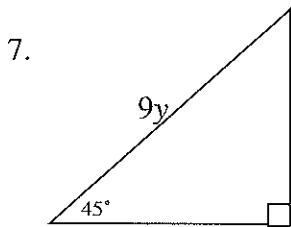
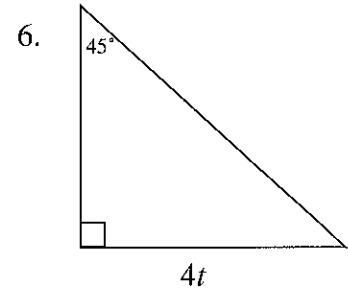
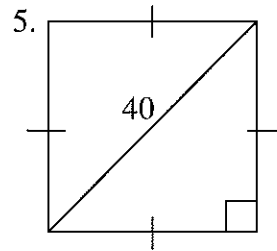
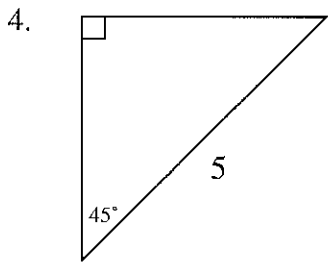
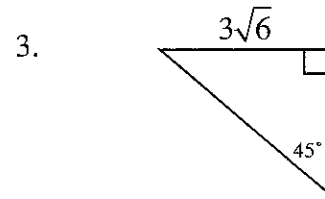
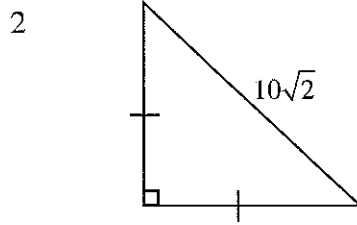
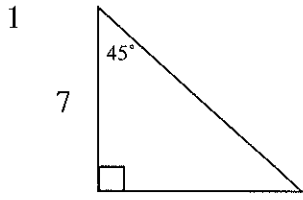
0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

0	0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4
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6	6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9

Name: \_\_\_\_\_ Period: \_\_\_\_\_

### Isosceles Right Triangles Assignment

I. Fill in the length of each segment in the following figures.

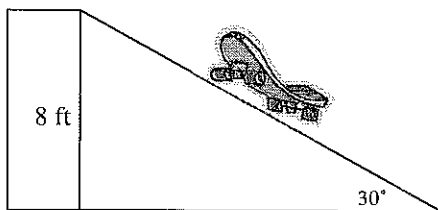


21. The hypotenuse of a 30-60-90 triangle is  $12\sqrt{2}$  ft. Find the **area** of the triangle.

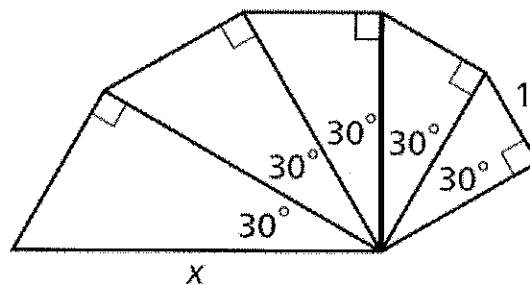
22. Find the perimeter and area of a  $30^\circ$ - $60^\circ$ - $90^\circ$  triangle with hypotenuse length 28 centimeters.

24. Find the perimeter and area of an equilateral triangle with height 30 yards.

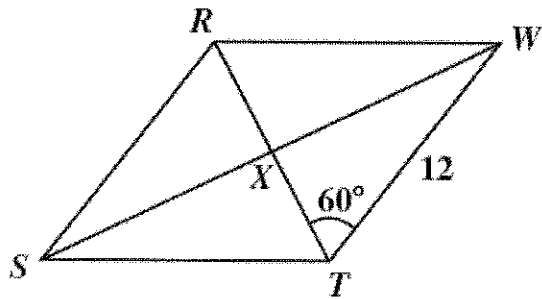
25. A skate board ramp must be set up to rise from the ground at  $30^\circ$ . If the height from the ground to the platform is 8 feet, how far away from the platform must the ramp be set?



26. Find the value of  $x$ .

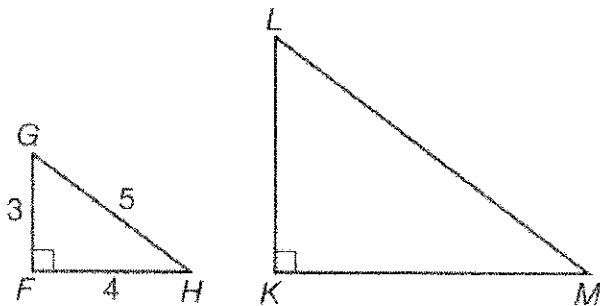


13. If  $RSTW$  is a rhombus, what is the area of  $\triangle WXT$ ?



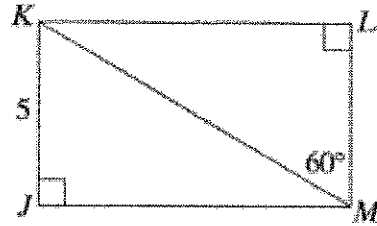
- A  $18\sqrt{3}$
- B  $36\sqrt{3}$
- C 36
- D 48

$\triangle FGH \sim \triangle KLM$ . Use these triangles for questions 4–6.



4. Which of the following must be true?
- A.  $\tan G = \tan L$
  - B.  $\tan G = \tan M$
  - C.  $\sin H = \tan L$
  - D.  $\sin H = \tan M$

14. In rectangle  $JKLM$  below, what is the length of diagonal  $\overline{KM}$ ?



5. If  $\sin G = \frac{4}{5}$ , then which of the following must also be true?
- A.  $\sin H = \frac{4}{5}$
  - B.  $\sin K = \frac{4}{5}$
  - C.  $\sin M = \frac{4}{5}$
  - D.  $\sin L = \frac{4}{5}$
6. If  $\sin H = \frac{3}{5}$ , then which of the following must also be true?
- A.  $\sin K = \frac{3}{5}$
  - B.  $\sin L = \frac{3}{5}$
  - C.  $\cos L = \frac{3}{5}$
  - D.  $\cos M = \frac{3}{5}$