Geometry
Ch. 8-9A HW #10 – Special Right Triangles

Name: _____
Period: _____

Preview of an important new topic: Identifying **opposite** and **adjacent** legs with respect to an acute angle.
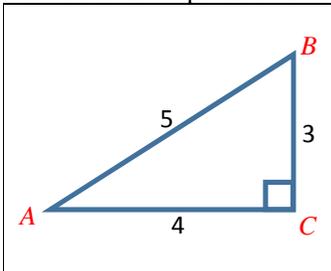
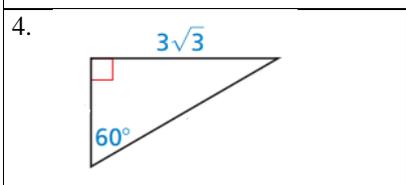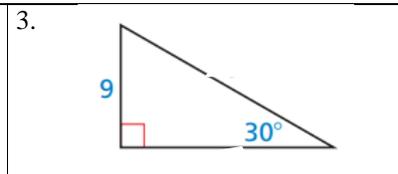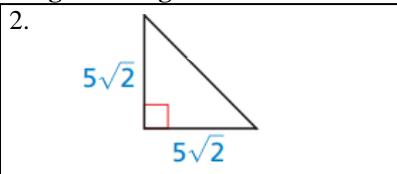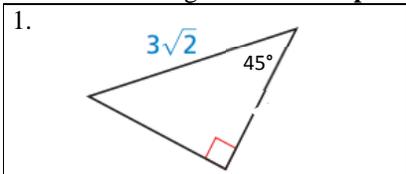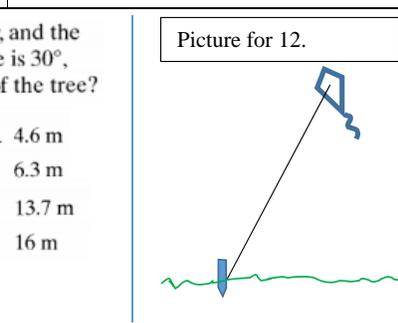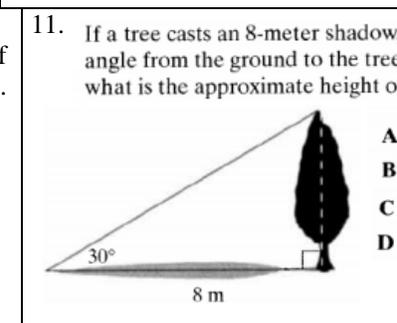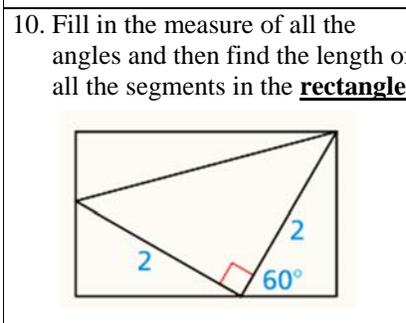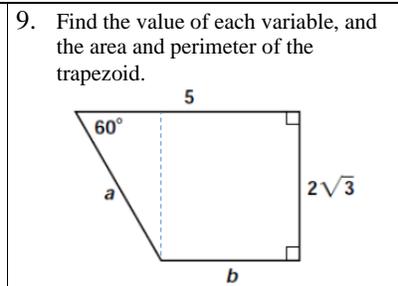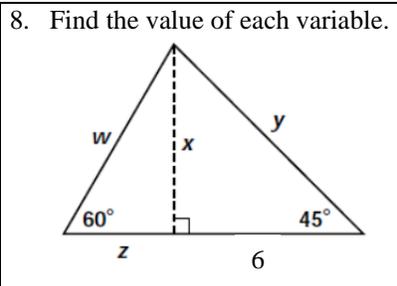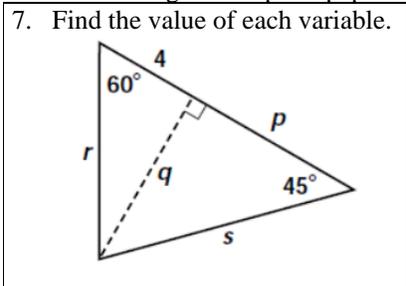a) How long is the leg that is **_opposite_** to $\angle A$? _____
b) How long is the leg that is **_adjacent_** to $\angle A$? _____
c) How long is the leg that is **_opposite_** to $\angle B$? _____
d) How long is the leg that is **_adjacent_** to $\angle B$? _____

Angle	$\dfrac{opp\ leg}{adj\ leg}$	$\dfrac{opp\ leg}{hyp}$	$\dfrac{adj\ leg}{hyp}$
A			
B			

Fill in the missing sides on the **Special Right Triangles**:

1.	2.	3.
$3\sqrt{2}$ 45°	$5\sqrt{2}$ / $5\sqrt{2}$	9 / 30°

4.	5.	6.
$3\sqrt{3}$ 60°	$12\sqrt{3}$ 30°	9 / 60°
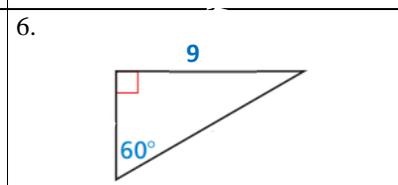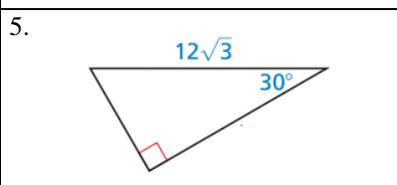
Problem solving: Use separte paper.

7. Find the value of each variable.
4 60° p r q 45° s

8. Find the value of each variable.
w y x 60° 45° z 6

9. Find the value of each variable, and the area and perimeter of the trapezoid.
5 60° a $2\sqrt{3}$ b

10. Fill in the measure of all the angles and then find the length of all the segments in the **rectangle**.
2 2 60°

11. If a tree casts an 8-meter shadow, and the angle from the ground to the tree is 30°, what is the approximate height of the tree?

A 4.6 m
B 6.3 m
C 13.7 m
D 16 m

30° 8 m

Picture for 12.

12. A flying kite has its string staked to the ground. The kite string makes a 60° angle with the ground. The kite is directly above point *P*, which is 28 feet away from the stake. Approximately how long is the kite string?

A 56 ft **B** 48.5 ft **C** 40 ft **D** 14 ft

13. Find the value of *x*.
x 4

14. The height of an equilateral triangle is 18. Find the perimeter of the triangle.
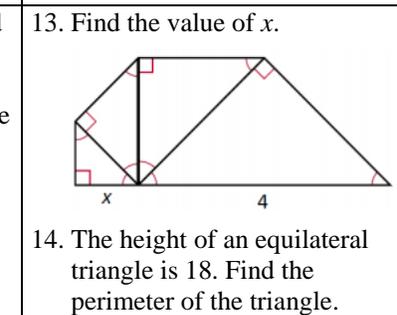
15. The diagonal of a square is 8. Find the area and perimeter of the square.
16. The perimeter of an equilateral triangle is 24. Find the area.
17. The perimeter of a square is 24, find the length of the diagonal.

Review:

18. If 4 by 5 inch photo is enlarged to a 16 by 20 inch photo, what is the scale factor? By what factor did the area increase? Find the area of each to check.

19. Find the value of *x* and *y*. Why are the △'s similar?
12 15 8 y x y+3
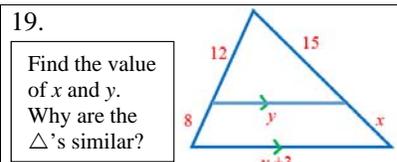
20. I'm 6 feet tall and my shadow at noon today was 4 ft 6 inches. If the shadow of the goal post was 22 ft, how tall is the goal post?