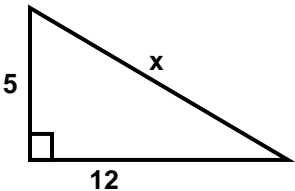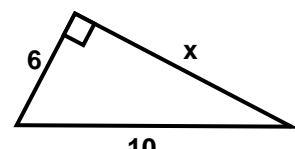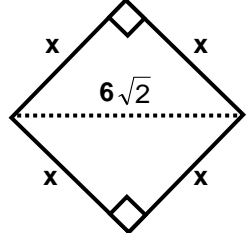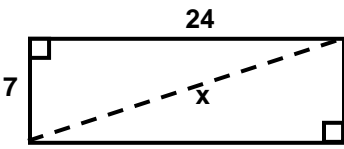NAME_____DATE_____PER._____

REVIEW #9: RIGHT TRIANGLES

PART 1: Pythagorean Theorem & Its Converse
For each of the following, find the value of 'x' or the length indicated.

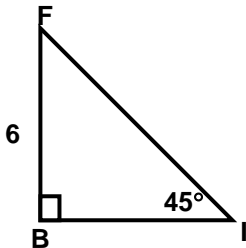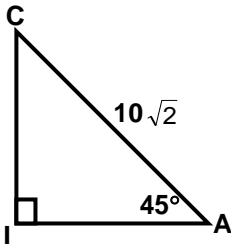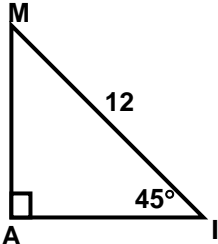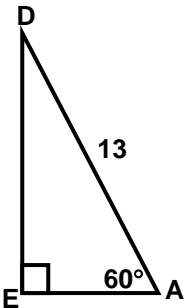|	
_____1.	A right triangle with vertical leg 5, horizontal leg 12, and hypotenuse x.
_____2.	A right triangle with legs 6 and 10, hypotenuse x (right angle at top).
_____3.	A square (diamond orientation) with sides x, x, x, x and diagonal $6\sqrt{2}$.
_____4.	A rectangle with width 7 and length 24, with diagonal x.
_____5.	A rectangle has a diagonal of 2 cm and a length of $\sqrt{3}$ cm. Find its width.
_____6.	Find the length of a diagonal of a square with a perimeter of 16.

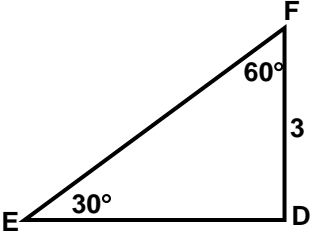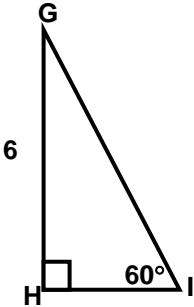**Tell whether a right triangle with sides of given lengths can be formed.**
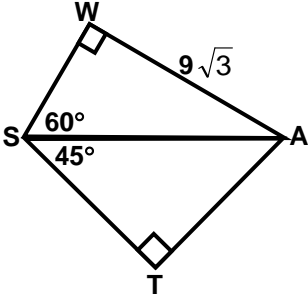
7. Can a right triangle be formed? YES or NO	Side lengths: 8, $8\sqrt{3}$, 16

8. Can a right triangle be formed? YES or NO	Side lengths: 11, 11, 15
9. Can a right triangle be formed? YES or NO	Side lengths: 8, 14, 22

PART 2: 45°-45°-90° & 30°-60°-90° Triangles
For each of the following, find the indicated lengths.

10. FI = _____ BI = _____	
11. CI = _____ IA = _____	
12. AI = _____ MA = _____	
13. DE = _____ EA = _____	

14. FE = _____ ED = _____	
15. GI = _____ HI = _____	
16. SW = _____ SA = _____ ST = _____ TA = _____	

PART 3: RADICAL EXPRESSIONS
Express in the simplest form.

17. _____	$\sqrt{24}$
18. _____	$\sqrt{120}$
19. _____	$\sqrt{3} \cdot \sqrt{6}$

20. _____	$\dfrac{\sqrt{12}}{\sqrt{6}}$
21. _____	$\dfrac{6\sqrt{20}}{3\sqrt{4}}$

22. _____	$\left(\sqrt{16}\right)^2$
23. _____	$\left(3\sqrt{5}\right)^2$
24. _____	$\dfrac{2}{\sqrt{3}}$
25. _____	$\dfrac{8}{\sqrt{2}}$

PART 4: APPLICATIONS OF RIGHT TRIANGLES
For each of the following, find the indicated value.

_____26.	Sarah headed north from her house on Texas street for 20 feet. She then headed west on University Drive and went 15 feet. How far from home was she?
_____27.	To secure a tailgating tent, a 25-inch cord is extended from the top of a vertical pole to the ground. If the cord makes a 30° angle with the ground, how tall is the pole?

_____28.	One morning as John was leaving for school, he discovered his dog got out. He chased his dog south on 52nd street for 30 ft and then west on 1st avenue for 50 ft where he caught the dog. How far from home did the dog end up? Round to the nearest tenth.
_____29.	If you had a 15 foot ladder, How far away from the base of a wall would you have to put it to reach a window 12 feet up?
_____30.	A tree broke 6 feet from the bottom. If the top of the tree landed 7 feet from the base of the tree, how tall was the tree originally? Round to the nearest thousandth.