Geometry Assessment Analysis – SOL Alignment and Cognitive Demand

STANDARD G.8

The student will solve real-world problems involving right triangles by using the Pythagorean Theorem and its converse, properties of special right triangles, and right triangle trigonometry.

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1. Two sides of a right triangle have side lengths of 6 and 8. Select all possible lengths of the 3rd side.

2	$\sqrt{7}$	$2\sqrt{7}$
$\sqrt{14}$	10	14

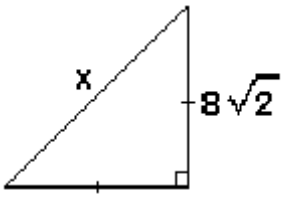
2. What is the approximate value of x?

a) 11.3

b) 16.0

c) 19.6

d) 22.6



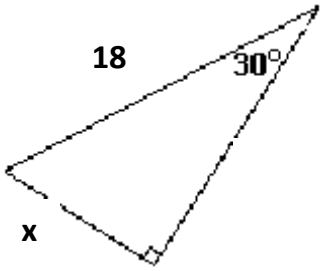
3. What is the value of *x*?

a) 3

b) 9

c) $6\sqrt{3}$

d) $9\sqrt{3}$



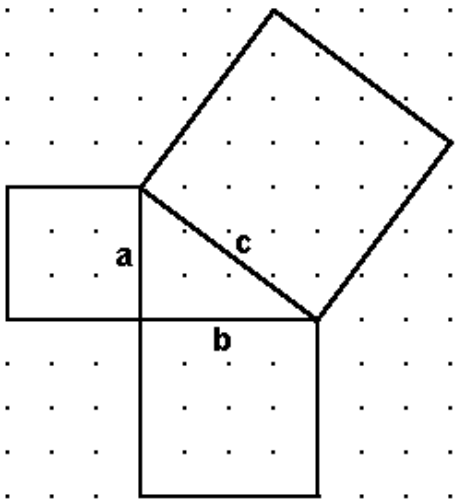
4. Compare the area of $a^2 + b^2$ to the area c^2. Which statement is true?

a) $a^2 + b^2 = c^2$

b) $a^2 + b^2 > c^2$

c) $a^2 + b^2 < c^2$

d) not enough information to draw a conclusion



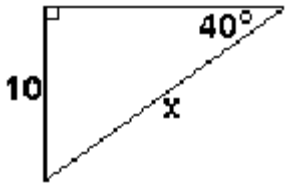
5. Which trigonometric equation could be used correctly to solve for the missing side labeled x?

a) $\sin 40^\circ = \frac{x}{10}$

b) $\tan 40^\circ = \frac{10}{x}$

c) $\sin 50^\circ = \frac{10}{x}$

d) $\cos 50^\circ = \frac{10}{x}$



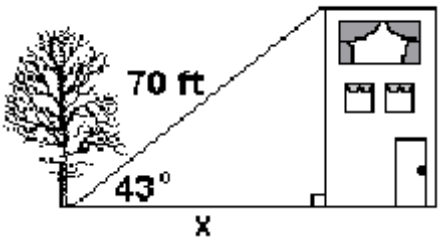
6. What is the approximate distance from the house to the tree?

a) 47.8 ft

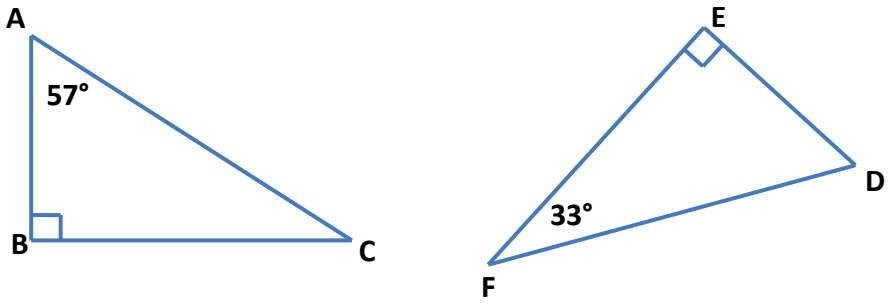
b) 51.2 ft

c) 65.3 ft

d) 75.1 ft

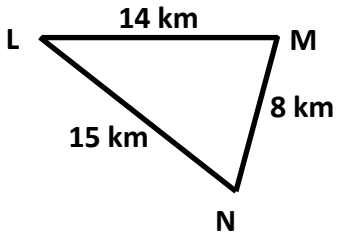


7. From the table below, select all that are equivalent to sin (A).



cos(D)	cos(F)	sin(F)
sin(C)	sin(D)	cos(C)

8. Using triangle LMN, select the correct classification and supporting statement that justifies the classification.



Type of Triangle
Acute
Obtuse
Right

Supporting Statement
$a^2 + b^2 < c^2$
$a^2 + b^2 = c^2$
$a^2 + b^2 > c^2$