Similarity Quest

Name: _____ **Date:** _____

1. Which set of numbers can *not* represent the lengths of the sides of a triangle?

a) {6, 8, 11} b) {7, 5, 6} c) {7, 18, 11} d) {9, 12, 19}

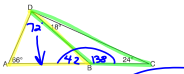
2. If the lengths of two sides of a triangle are 6 and 8, the length of the third side may be

a) 7 b) 2 c) 14 d) 15

3. Which set of numbers could *not* represent the lengths of the sides of a right triangle?

a) $\{1, 3, \sqrt{10}\}$ b) {2, 3, 4} c) {3, 4, 5} d) {8, 15, 17}

4. As shown in the diagram of $\triangle ACD$ below, b is a point on $\overline{AC}$ and $\overline{DB}$ is drawn.



If $m\angle A = 66$, $m\angle CDB = 18$, and $m\angle C = 24$, what is the longest side of $\triangle ABD$?

a) $\overline{AB}$ b) $\overline{DC}$ c) $\overline{AD}$ d) $\overline{BD}$

5. What is the length of the altitude of an equilateral triangle whose side has length 4?

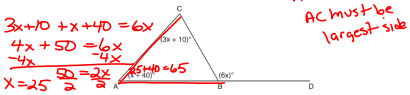
a) $2\sqrt{3}$ b) 2 c) $4\sqrt{3}$ d) 4

6. For which measures of the sides of $\triangle ABC$ is angle B the largest angle of the triangle?

a) $AB = 2$, $BC = 6$, $AC = 7$ b) $AB = 6$, $BC = 12$, $AC = 8$

c) $AB = 16$, $BC = 9$, $AC = 10$ d) $AB = 18$, $BC = 14$, $AC = 5$

7. In the diagram of $\triangle ABC$ below, $\overline{AB}$ is extended to point D.



If $m\angle CAB = x + 40$, $m\angle ACB = 3x + 10$, and $m\angle CBD = 6x$, what is $m\angle CAB$?

a) 13 b) 25 c) 53 d) 65

8. In $\triangle ABC$, $m\angle A = 3x$, $m\angle B = 4x - 19$, and $m\angle C = 3x - 1$. Which statement is true?

a) $\overline{AB}$ is the longest side of $\triangle ABC$. b) $\triangle ABC$ is an isosceles triangle.

c) $\overline{AC}$ is the longest side of $\triangle ABC$. d) $\triangle ABC$ is an obtuse triangle.

9. The hypotenuse of right triangle ABC is 10 and $m\angle A = 60$. What is the measure, to the *nearest tenth*, of the leg opposite $\angle A$?

a) 5.0 b) 5.8 c) 7.1 d) 8.7

10. In the accompanying diagram, $\triangle RST$ is a right triangle, $\overline{SU}$ is the altitude to hypotenuse $\overline{RT}$, $RT = 16$, and $RU = 7$.

What is the length of $\overline{ST}$?

a) $3\sqrt{7}$ b) $4\sqrt{7}$ c) 9 d) 12

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1. Answer: c
2. Answer: a
3. Answer: b
4. Answer: a
5. Answer: a
6. Answer: a
7. Answer: d
8. Answer: c
9. Answer: d
10. Answer: d

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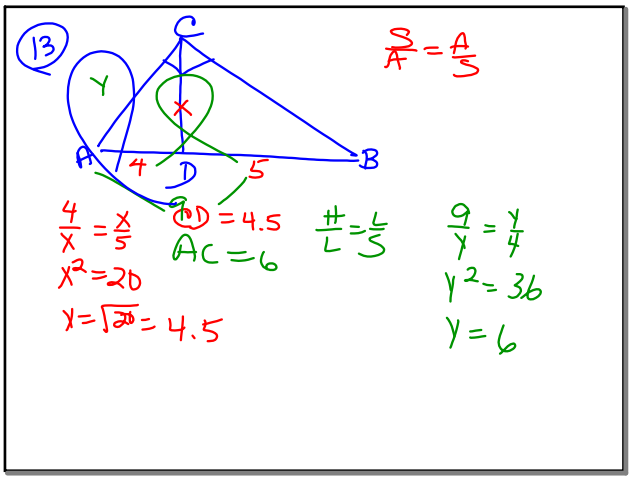

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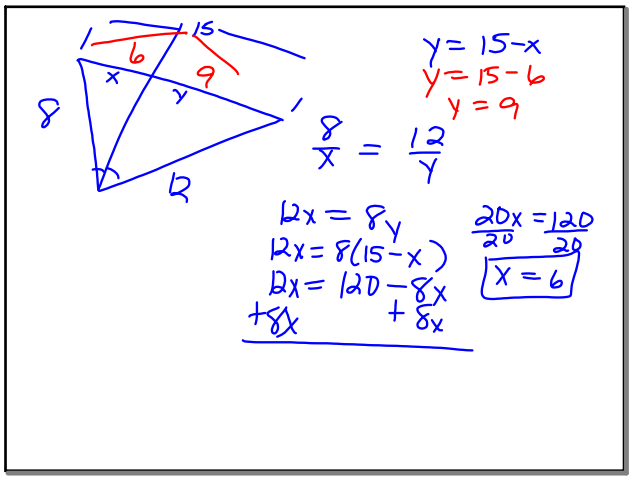

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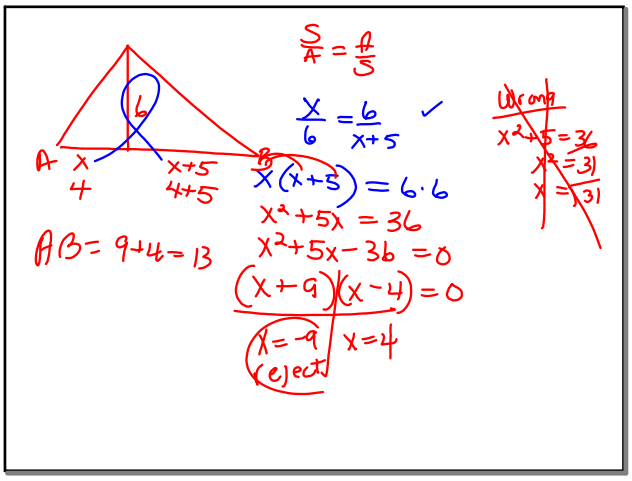

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