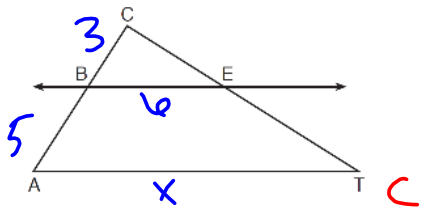
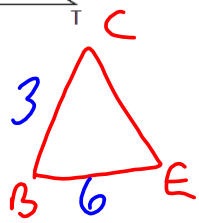
Name: _____ Date: _____

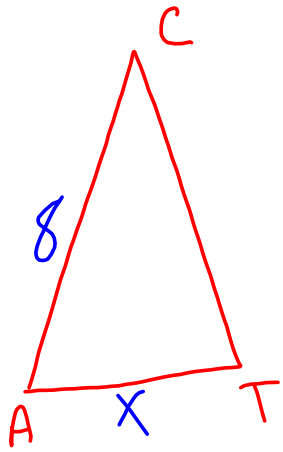
Review Sheet

1. In the diagram below of ΔACT, $\overleftrightarrow{BE} \parallel \overline{AT}$.



If CB = 3 , BA = 5 , and BE = 6 , what is the length of AT?

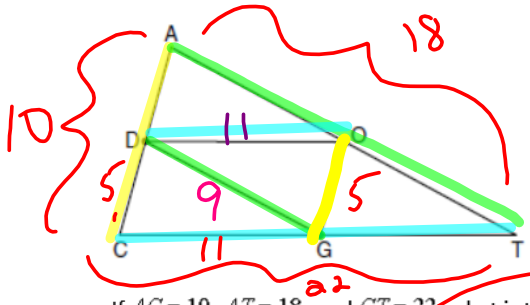




$\frac{3}{6} = \frac{8}{x}$

$\frac{3x}{3} = \frac{48}{3}$ $x = 16$

2. In the diagram below of ΔACT, *D* is the midpoint of $\overline{AC}$, *O* is the midpoint of $\overline{AT}$, and *G* is the midpoint of $\overline{CT}$.



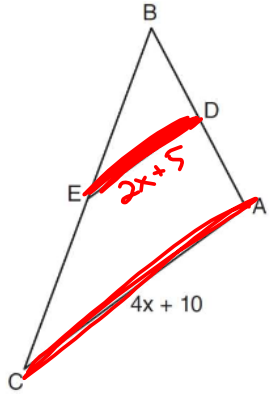
If $AC = 10$, $AT = 18$, and $CT = 22$, what is the perimeter of **quadrilateral** *CDOG*?

$\overline{CD}$ $\overline{DO}$ $\overline{OG}$ $\overline{GC}$

$5 + 11 + 5 + 11$

32

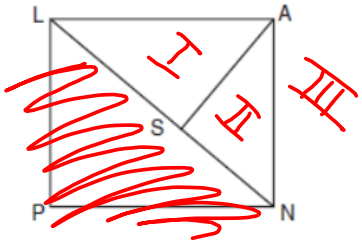
3. In the diagram below of ΔABC, D is the midpoint of $\overline{AB}$, and E is the midpoint of $\overline{BC}$.



If $AC = 4x + 10$, which expression represents DE?

1) $x + 2.5$
2) $2x + 5$
3) $2x + 10$
4) $8x + 20$

4. The accompanying diagram shows part of the architectural plans for a structural support of a building. *PLAN* is a rectangle and $\overline{AS} \perp \overline{LN}$.



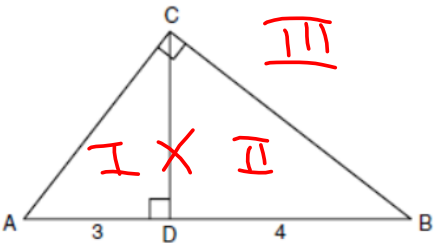
Which equation can be used to find the length of $\overline{AS}$?

1) $\frac{AS}{LS} = \frac{LS}{SN}$
2) $\frac{AS}{SN} = \frac{AS}{LS}$
3) $\frac{AN}{LN} = \frac{AS}{LS}$
4) $\frac{LS}{AS} = \frac{AS}{SN}$

Same = Same

Δ I : $\overline{LS}$, $\overline{LA}$, $\overline{SA}$
Δ II : $\overline{SA}$, $\overline{SN}$, $\overline{AN}$
Δ III : $\overline{LA}$, $\overline{AN}$, $\overline{LN}$

5. In the diagram below of right triangle ACB, altitude $\overline{CD}$ intersects $\overline{AB}$ at D. If $AD = 3$ and $DB = 4$, find the length of $\overline{CD}$ in simplest radical form.



$\Delta I : 3, x$
$\Delta II : 4, x$
$\Delta III : 7$

$\Delta I \sim \Delta II$

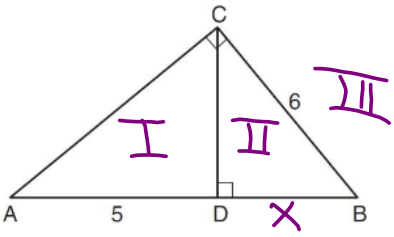
$\frac{3}{x} = \frac{x}{4}$

$\sqrt{x^2} = \sqrt{12}$

$\sqrt{4 \cdot 3}$

$2\sqrt{3}$

6. In the diagram below of right triangle ABC, $\overline{CD}$ is the altitude to hypotenuse $\overline{AB}$, $CB = 6$, and $AD = 5$



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

$\Delta I : 5$
$\Delta II : 6, x$
$\Delta III : 6, x+5$

$\Delta II \sim \Delta III$

$\frac{x}{6} = \frac{6}{x+5}$

$36 = x(x+5)$

$36 = x^2 + 5x$

$-36 \quad -36$

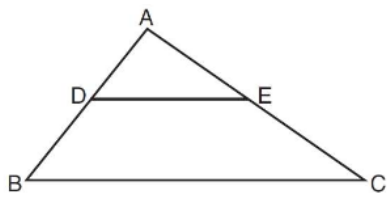
$0 = x^2 + 5x - 36$

$(x-4)(x+9)$

$x - 4 = 0 \quad | \quad x + 9 = 0$

$x = 4 \quad | \quad x = -9$

7. In the diagram below, $\triangle ABC \sim \triangle ADE$.



Which measurements are justified by this similarity?

1) $AD = 3$, $AB = 6$, $AE = 4$, and $AC = 12$

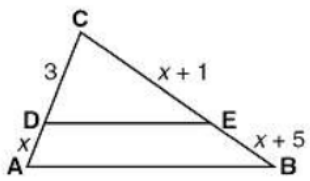
2) $AD = 5$, $AB = 8$, $AE = 7$, and $AC = 10$

3) $AD = 3$, $AB = 9$, $AE = 5$, and $AC = 10$

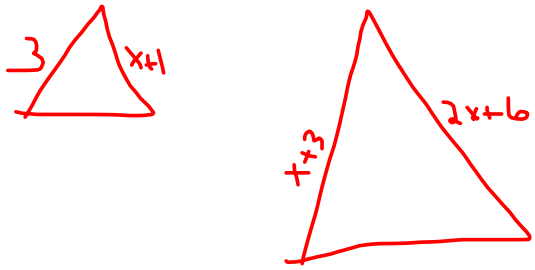
4) $AD = 2$, $AB = 6$, $AE = 5$, and $AC = 15$

8.

In $\triangle ABC$, find x given that $\overline{DE} \parallel \overline{AB}$.

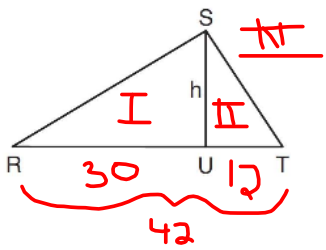


$$\frac{3}{x+1} = \frac{x+3}{2x+6}$$



9. In $\triangle RST$ shown below, altitude $\overline{SU}$ is drawn to $\overline{RT}$ at U.

$\triangle$ I : 30, h
II : h, 12
III 42

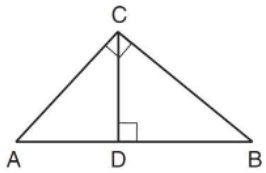


If $SU = h$, $UT = 12$, and $RT = 42$, which value of h will make $\triangle RST$ a right triangle with $\angle RST$ as a right angle?

1) $6\sqrt{3}$
2) $6\sqrt{10}$
3) $6\sqrt{14}$
4) $6\sqrt{35}$

$$\frac{30}{h} = \frac{h}{12}$$

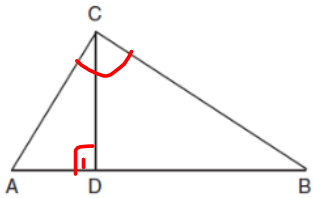
10. In the diagram below, $\overline{CD}$ is the altitude drawn to the hypotenuse $\overline{AB}$ of right triangle ABC.



Which lengths would *not* produce an altitude that measures $6\sqrt{2}$?

1) $AD = 2$ and $DB = 36$
2) $AD = 3$ and $AB = 24$
3) $AD = 6$ and $DB = 12$
4) $AD = 8$ and $AB = 17$

11. In right triangle ABC shown below, altitude $\overline{CD}$ is drawn to hypotenuse $\overline{AB}$. Explain why $\triangle ABC \sim \triangle ACD$.



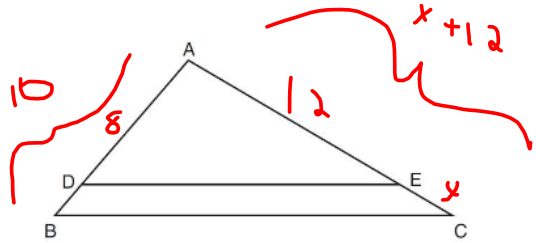
$\angle A \cong \angle A$ reflexive

$\angle ACB$ is rt $\angle 1$ is rt

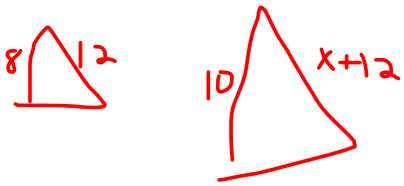
$\angle ACB = \angle 1$

AA $\sim$

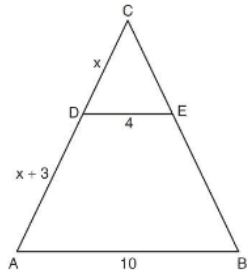
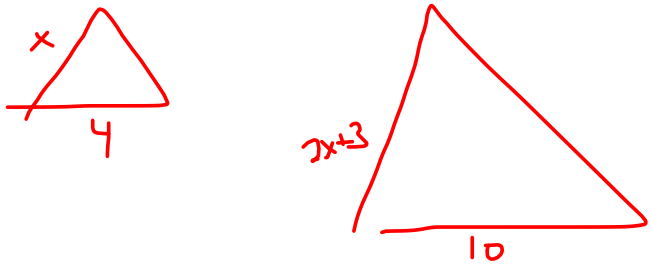
12. In the diagram of $\triangle ABC$ shown below, $\overline{DE} \parallel \overline{BC}$.



If $AB = 10$, $AD = 8$, and $AE = 12$, what is the length of $\overline{EC}$?



13. In the diagram below of $\triangle ABC$, $\overline{CDA}$, $\overline{CEB}$, $\overline{DE} \parallel \overline{AB}$, $DE = 4$, $AB = 10$, $CD = x$, and $DA = x + 3$.



What is the value of x?