

Similarity Review Solutions

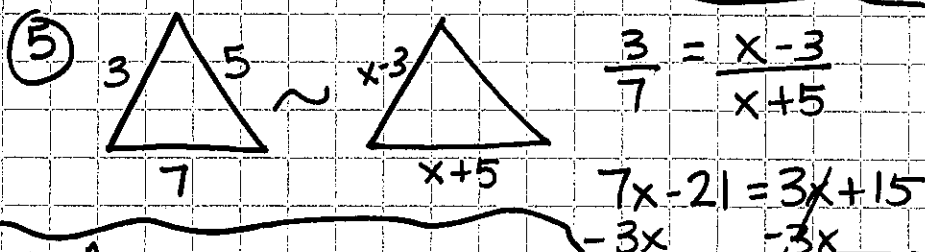
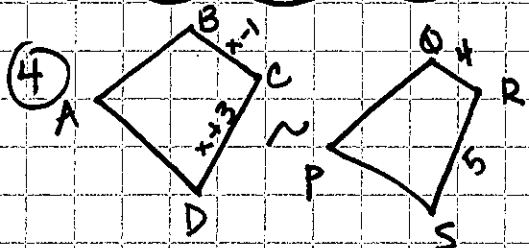
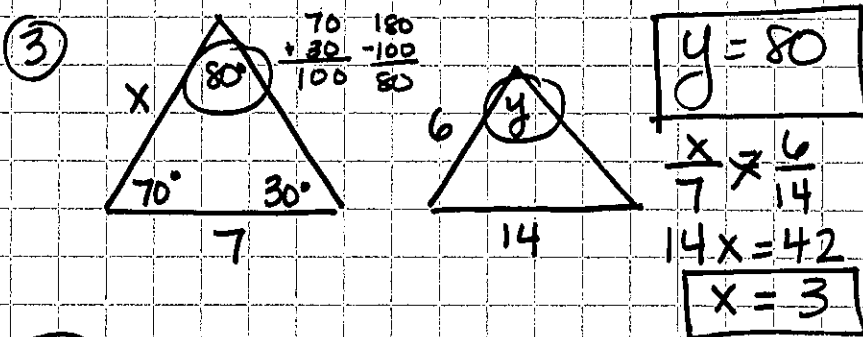
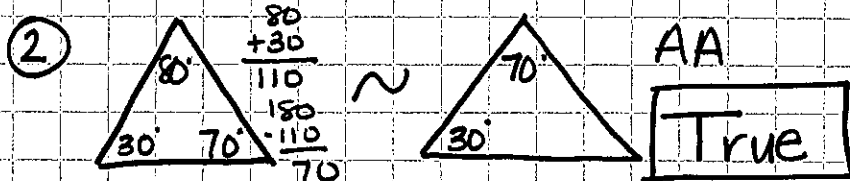
① $\frac{x}{x-2} \neq \frac{10}{x+1}$

$$x^2 + x = 10x - 20$$

$$\frac{-10x \quad -10x}{x^2 - 9x + 20 = 0}$$

$$(x-5)(x+4) = 0$$

$x=5$ | $x=-4$

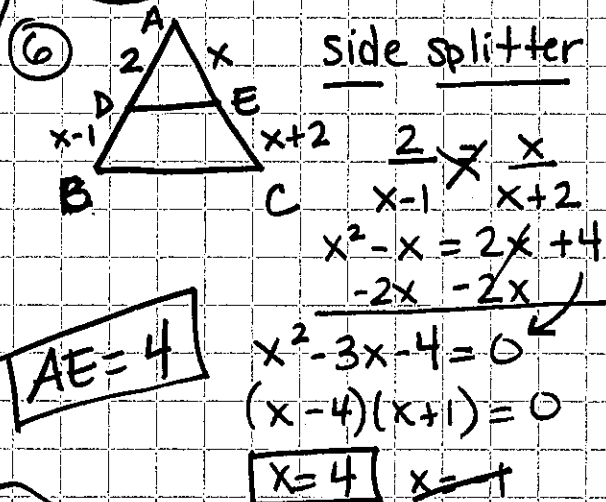


$\frac{x-1}{x+3} \neq \frac{4}{5}$

$$5x - 5 = 4x + 12$$

$$\frac{-4x \quad -4x}{x - 5 = 12}$$

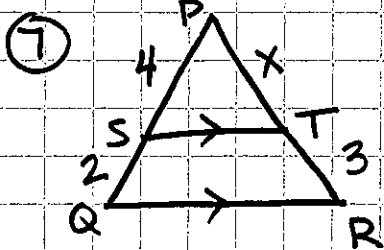
$x=17$



$$4x - 2x = 15$$

$$\frac{+21 \quad +21}{4x = 36}$$

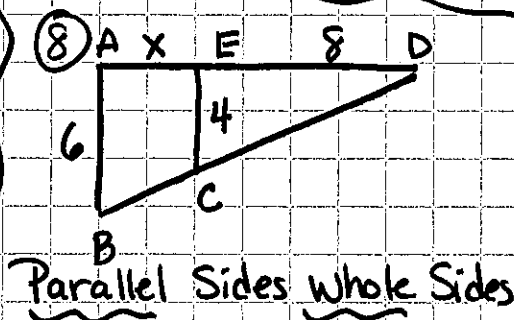
$x=9$



$\frac{4}{2} \neq \frac{x}{3}$

$$2x = 12$$

$x=6$



⑨ $\frac{3}{x} = \frac{x+1}{x+5}$

$$x^2 + x = 3x + 15$$

$$\frac{-3x \quad -3x}{x^2 - 2x - 15 = 0}$$

$$(x-5)(x+3) = 0$$

$x=5$ | $x=-3$

⑩ Similar b/c AA
 60° angles and reflexive angle

⑪ Similar b/c SSS
 Similarity.

$\frac{6}{3} = \frac{8}{4} = \frac{10}{5}$
 $2 = 2 = 2$

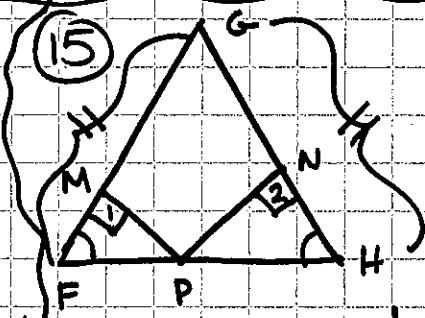
⑫ Similar b/c SAS
 (vertical \angle 's are \cong)

$\frac{3}{7} \neq \frac{3}{7}$
 $21 = 21 \checkmark$

⑬ not \sim
 corresponding angles are not \cong .

⑭ not \sim
 because corresponding sides are not proportional

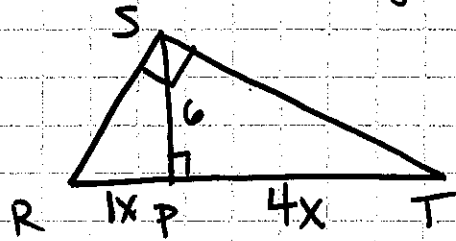
$\frac{4}{9} \neq \frac{6}{12}$
 $48 \neq 54$



Statements	Reasons
① PQRS rect.	① given
$\overline{PR} \perp \overline{TQ}$	
② $\angle 1$ & $\angle 2$ are \perp	② \perp lines form \perp
③ $\angle 1 \cong \angle 2$	③ all \perp \cong
④ $\overline{SR} \parallel \overline{PQ}$	④ opp. sides of \square are \parallel
⑤ $\angle 3 \cong \angle 4$	⑤ When 2 \parallel lines are crossed by a transversal, alt. int. \angle 's \cong .
⑥ $\triangle TVR \sim \triangle PVQ$	⑥ AA
⑦ $\frac{PV}{VR} = \frac{VQ}{TV}$	⑦ CSSTP
⑧ $PV \cdot TV = VQ \cdot VR$	⑧ In a proportion, prod. of means = prod. of extremes

Statements	Reasons
① $\triangle FGH$ $\overline{FG} \cong \overline{GH}$	① given
$\overline{PM} \perp \overline{FG}$	
$\overline{PN} \perp \overline{GH}$	
② $\angle F \cong \angle H$	② In a \triangle , angles opposite \cong sides are \cong .
③ $\angle 1$ and $\angle 2$ \perp	③ \perp lines form \perp
④ $\angle 1 \cong \angle 2$	④ all \perp \cong
⑤ $\triangle FMP \sim \triangle HNP$	⑤ AA
⑥ $\frac{FM}{NH} = \frac{FP}{PH}$	⑥ CSSTP

(17) altitude to Hypotenuse = HL or SAAS



$$\frac{S_1}{A} = \frac{A}{S_2}$$

$$\frac{1x}{6} = \frac{6}{4x}$$

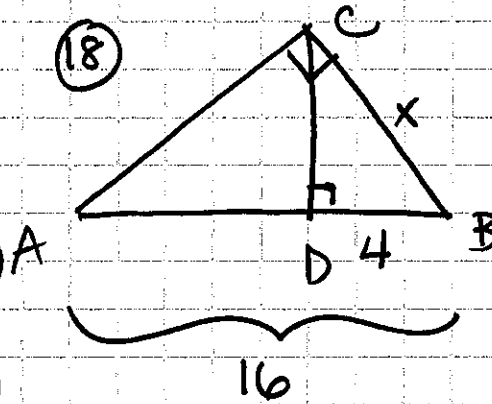
RP = 3

$$4x^2 = 36$$

$$x^2 = 9$$

$$x = 3$$

(18)



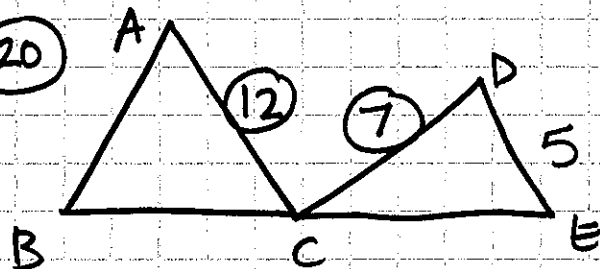
$$\frac{H}{L} = \frac{L}{S}$$

$$\frac{16}{x} = \frac{x}{4}$$

$$x^2 = 64$$

x = 8

(20)



P = 30

P = x

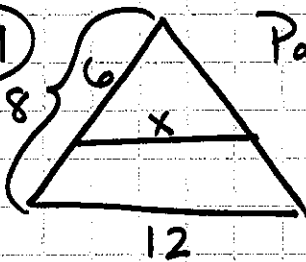
$$\frac{12}{7} \times \frac{30}{x} \Rightarrow 12x = 210$$

$$x = 17.5$$

(A)

ratio of sides = ratio of Perim

(19)



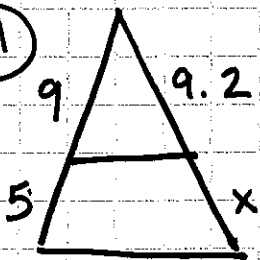
Parallel sides, whole sides

$$\frac{6}{x} = \frac{8}{12}$$

$$8x = 72$$

x = 9

(21)



$$\frac{9}{5} = \frac{9.2}{x}$$

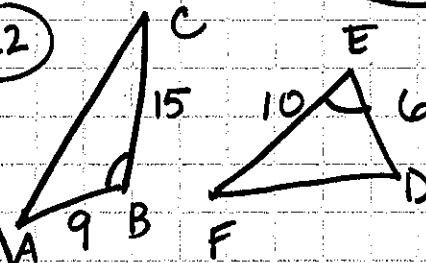
$$9x = 46$$

$$x = 5.1$$

14.3

(A)

(22)



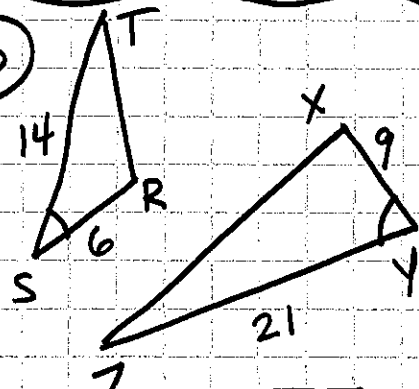
$$\frac{9}{6} = \frac{15}{10}$$

$$90 = 90$$

Δ's are ~ by SAS

(D)

(23)



$$\frac{14}{21} = \frac{6}{9}$$

$$126 = 126$$

Yes. They are similar by SAS.