7.1 and 7.2 Homework

Determine whether each pair of figures is similar. Justify your answer.

1.

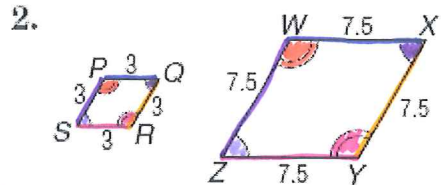

B 6 $86°$ 9 $59°$ $35°$ A 10.5 C
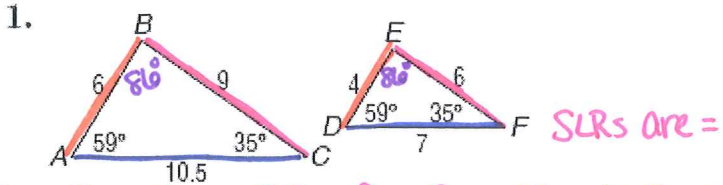
E 4 $86°$ 6 $59°$ $35°$ D 7 F SLRs are =

$\dfrac{AB}{DE} = \dfrac{6}{4} = \dfrac{3}{2}$ $\dfrac{BC}{EF} = \dfrac{9}{6} = \dfrac{3}{2}$ $\dfrac{AC}{DF} = \dfrac{10.5}{7} = \dfrac{3}{2}$

$\angle A \cong \angle D$ $\angle B \cong \angle E$ $\angle C \cong \angle F$

Yes, $\triangle ABC \sim \triangle DEF$ because SLR are = and corr. $\angle$s are $\cong$

A. Write the similarity statement.
B. Find the scale factor.
C. Find x.
D. Find the measure of the indicated side

2.

W 7.5 X
P 3 Q 7.5
3 3 7.5
S 3 R
Z 7.5 Y

$\dfrac{QR}{XY} = \dfrac{3}{7.5} = \dfrac{2}{5}$

$\dfrac{SR}{ZY} = \dfrac{3}{7.5} = \dfrac{2}{5}$

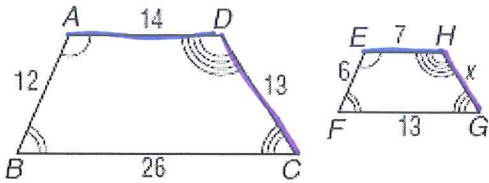$\dfrac{SP}{ZW} = \dfrac{3}{7.5} = \dfrac{2}{5}$

$\dfrac{PQ}{WX} = \dfrac{3}{7.5} = \dfrac{2}{5}$

All SLRs are =

$\angle P \cong \angle W, \angle Q \cong \angle X, \angle R \cong \angle Y, \angle S \cong \angle Z$

Yes Rhombus SPQR $\sim$ Rhombus ZWXY because all corr. $\angle$s are $\cong$ and SLR =

3. $\overline{GH}$

A 14 D
12 13
B 26 C

E 7 H
6 x
F 13 G

A. Quad ABCD ~ Quad EFGH

Scale factor B: 2 or $\dfrac{1}{2}$
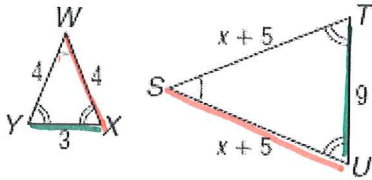
C. $x = \dfrac{13}{2}$

D. GH = $\dfrac{13}{2}$

b) $\dfrac{14}{7} = 2$ or $\dfrac{1}{2}$

c) $\dfrac{2}{1} = \dfrac{13}{x} \rightarrow 13 = 2x$

$x = \dfrac{13}{2}$ or 6.5

d) GH = x ← you just found this ☺

4. $\overline{ST}$ and $\overline{SU}$

$$\frac{TU}{YX} = \frac{SU}{WX} \Rightarrow \frac{9}{3} = \frac{x+5}{4}$$

$$9 \cdot 4 = 3(x+5)$$
$$36 = 3x + 15$$
$$21 = 3x$$
$$\boxed{7 = x}$$

$ST = 7 + 5 = 12$
$SU = 7 + 5 = 12$

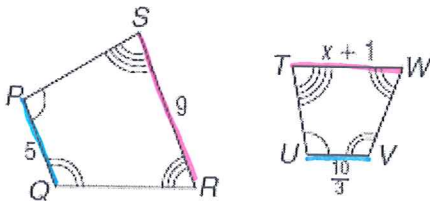A. $\triangle XYW \sim \triangle UTS$

B. $SF = \frac{1}{3}$ or 3

C. $X = 7$

D. ST = 12 SU = 12

5. $\overline{WT}$

$$\frac{PQ}{UV} = \frac{SR}{TW}$$

$$\frac{5}{\left(\frac{10}{3}\right)} = \frac{9}{(x+1)}$$

$$5(x+1) = \frac{10}{3} \cdot \frac{9}{1}$$
$$5x + 5 = 30$$
$$5x = 25$$
$$\boxed{x = 5}$$

$WT = 5 + 1$
$\boxed{WT = 6}$

Just b/c there is a fraction, doesn't mean it is a hard question!! Just Do it!!

A. $PQRS \sim UVWT$

B. $SF = \frac{3}{2}$ or $\frac{2}{3}$
must find x 1st

C. $X = 5$

D. WT = 6

6. $\overline{TS}$ and $\overline{SP}$
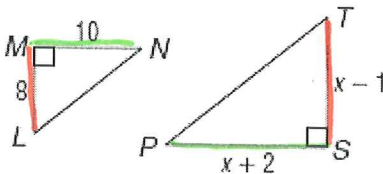
$$\frac{ML}{ST} = \frac{MN}{PS}$$

$$\frac{8}{x-1} = \frac{10}{x+2}$$

$$8(x+2) = 10(x-1)$$
$$8x + 16 = 10x - 10$$
$$26 = 2x$$
$$\boxed{13 = x}$$

$TS = 13 - 1$
$TS = 12$

$PS = 13 + 2$
$PS = 15$

A. $\triangle LMN \sim \triangle TSP$

B. $SF = \frac{2}{3}$ or $\frac{3}{2}$
Find x 1st

C. $X = 13$

D. TS = 12 SP = 15