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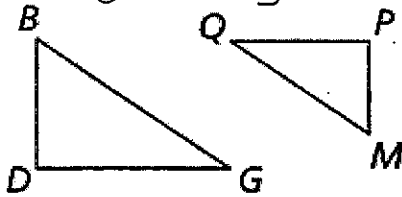
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HW #7-4: Quiz Review

1. List all pairs of congruent angles. Then write the ratios of the corresponding side lengths in a statement of proportionality.

$\triangle BDG \sim \triangle MPQ$
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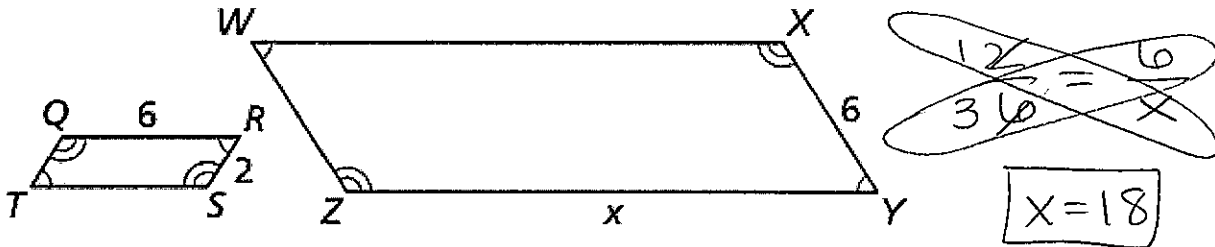


$\cong \angle$'s: $\angle B \cong \angle M$, $\angle G \cong \angle Q$,
 $\angle D \cong \angle P$

statement
of proportionality:

$$\frac{MP}{BD} = \frac{MQ}{BG} = \frac{PQ}{DG}$$

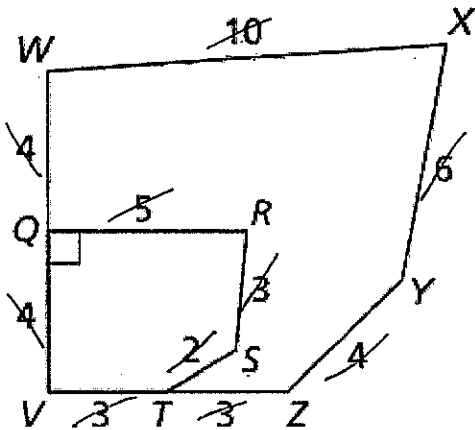
2. The polygons are similar. Find the value of x.



$$\frac{12}{36} = \frac{6}{x}$$

$x = 18$

3. Determine whether the polygons are similar. If they are, find the scale factor and write a similarity statement.



$$\frac{WX}{QR} = \frac{10}{5} = 2$$

$$\frac{XY}{RS} = \frac{6}{3} = 2$$

yes
they
are ~!

$$\frac{WV}{QV} = \frac{8}{4} = 2$$

$$\frac{YZ}{ST} = \frac{4}{2} = 2$$

$$\frac{ZY}{VT} = \frac{6}{3} = 2$$

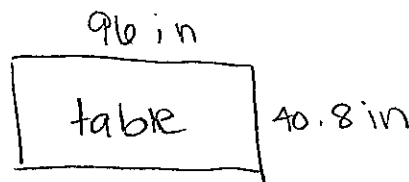
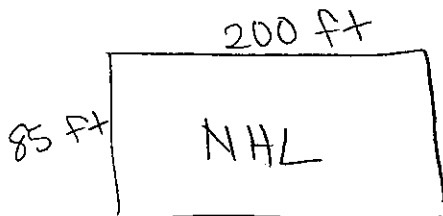
scale factor
is 2

$QRSTV \sim WXYZV$

(or $\frac{1}{2}$)

4. The dimensions of an official hockey rink used by the National Hockey League (NHL) are 200 feet by 85 feet. The dimensions of an air hockey table are 96 inches by 40.8 inches. Assume all corresponding angles are congruent.

- a. Draw a diagram of both hockey rinks.



if
 $WXYZV \sim QRSTV$

- b. Determine if the two surfaces are similar *HINT: you will want to convert feet $\rightarrow$ inches or inches $\rightarrow$ feet. Always work with the same units throughout!!!*

$$200 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ ft}} = 2400 \text{ in}$$

$$85 \text{ ft} \times \frac{12 \text{ in}}{1 \text{ ft}} = 1020 \text{ in}$$

$$\frac{2400}{96} = \frac{1020}{40.8}$$

$$97920 = 97920$$

ratios of sides are =, yes they are similar!

- c. If the two figures are similar, find the ratio of their perimeters and the ratio of their areas. If not, find the dimensions of an air hockey table that IS similar to the NHL hockey rink.

$$\text{ratio of perimeter} = \text{scale factor} = \frac{2400}{96} = 25 \text{ (or } \frac{1}{25})$$

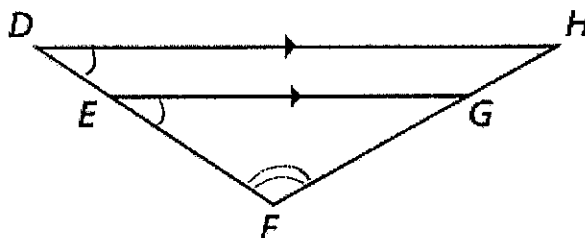
*per. of NHL is 25x bigger than table

$$\text{ratio of areas} = (\text{s.f.})^2 = (25)^2 = 625 \text{ (or } \frac{1}{625})$$

5. Write a two-column proof.

Given: $\overline{DH} \parallel \overline{EG}$

Prove: $\triangle FDH \sim \triangle FEG$



*area of NHL is 625x bigger than table

Statements

Reasons

① $\overline{DH} \parallel \overline{EG}$

① Given

② $\angle D \cong \angle FEG$

② $\parallel \rightarrow$ corresp. $\angle$'s $\cong$

③ $\angle F \cong \angle F$

③ reflex. prop. $\cong$

④ $\triangle FDH \sim \triangle FEG$

④ AA $\sim$ (2, 3)