**Name:** _____ **Period:** _____ **Date:** _____

# Unit 8 – Similarity Unit – HOMEFUN

## Day 1 Ratios and Proportions ** No Decimals Allowed**

**Simplify the following ratios.**

**1.** $\frac{40}{50}$ **2.** $\frac{1000}{225}$ **3.** $\frac{54}{45}$ **4.** $\frac{12x}{3x}$

**Simplify the following ratios – make sure the units are correct.**

**4.** $\frac{125\ oz}{5\ lb}$ **5.** $\frac{6\ cups}{1 pint}$ **6.** $\frac{12in}{4yd}$ **7.** $\frac{100\ m}{2\ km}$

**Solve the following Proportions.**

**8.** $\frac{4}{16}=\frac{a}{8}$ **9.** $\frac{14}{21}=\frac{x}{24}$ **10.** $\frac{3x}{12}=\frac{15}{12}$ **11.** $\frac{y-3}{y}=\frac{7}{10}$

**12.** $\frac{x}{3}=\frac{x+4}{x+2}$ **13.** $\frac{2y}{y}=\frac{3y+5}{4y}$

**For exercise #14 – 19, use the table to find the ratios. Express each ratio as a fraction.**

| Teams | Wins | Losses |
|---|---|---|
| Huskies | **18** | **10** |
| Tigers | **14** | **14** |
| Lancers | **2** | **16** |
| Grizzlies | **16** | **12** |

**14)** Games won to games lost for the Huskies.

**15)** Games won by the Lancers to games won by the Tigers.

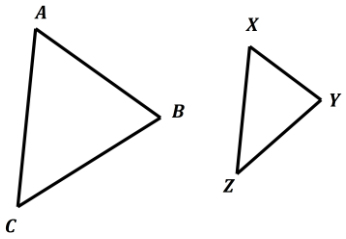
**16)** Games won to games played for Tigers.

**17)** Games won to games played for Mustangs.

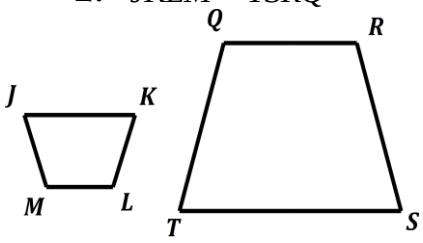
## Day 2 – Similar Polygons and Triangles

**List all pairs of congruent angles, and then write a proportion that relates to the corresponding sides for each pair of similar polygons. Leave all answers as fractions.**

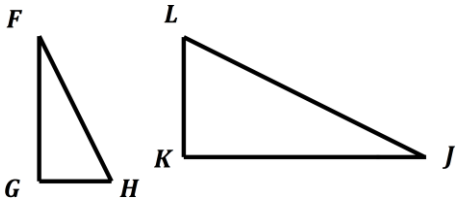
**1.** $\Delta ABC \sim \Delta XYZ$




**2.** $JKLM \sim TSRQ$



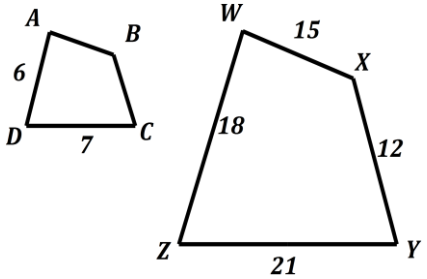

**3.** $\Delta FGH \sim \Delta JKL$




***Angles*** ***Sides*** ***Angles*** ***Sides*** ***Angles*** ***Sides***

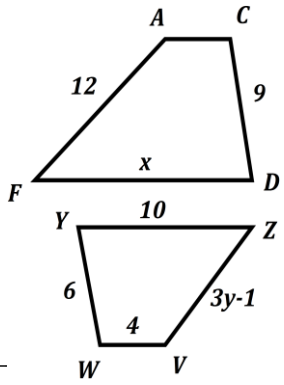
**Given each pair of polygons are similar, find the scale factor, and missing sides.**

**4.** $DCBA \sim WXYZ$




**Scale Factor:** _____ ***AB*** **=** _____

**5.** $ACDF \sim VWYZ$



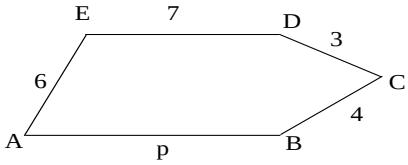

**Scale Factor:** _____

**AC** = _____, **VZ** = _____

**Use the diagram to complete the following. Given** $ABCDE \sim ZYXWV$

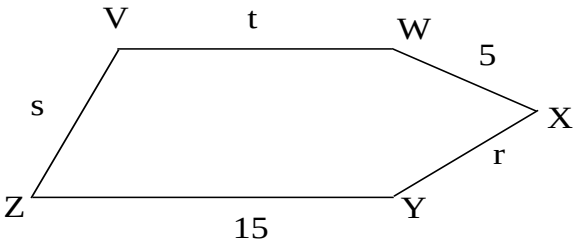
**9.** Write the scale factor of ABCDE to ZYXWV.

**10.** Write the scale factor of VWXYZ to ABCDE.




**11.** Find the values of p, r, s, and t.

**12.** Find the perimeters of each polygon.

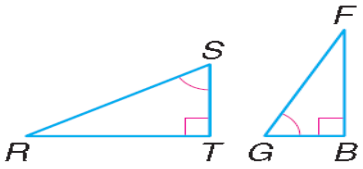



**13.** Find the ratio of the perimeter of VWXYZ to the perimeter of ABCDE.

## Day 3 Proving Triangles are Similar

**Determine if the following triangles are similar; if so give a reason why.**

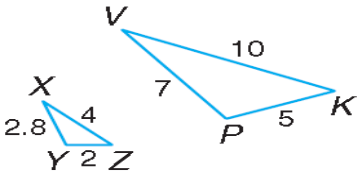
**1.**




$\triangle RST \sim \triangle$ ___?___

**Reason:** _____

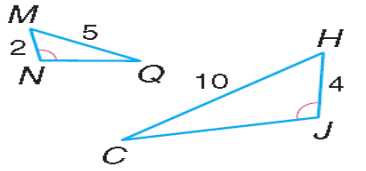
**2.**




$\triangle XYZ \sim \triangle$ ___?___

**Reason:** _____

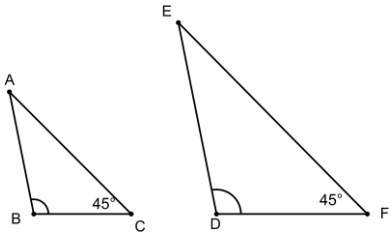
**3.**




$\triangle MNQ \sim \triangle$ ___?___

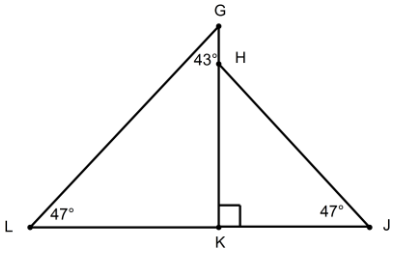
**Reason:** _____

**4.** $\Delta ABC \sim \Delta EDF$**?**



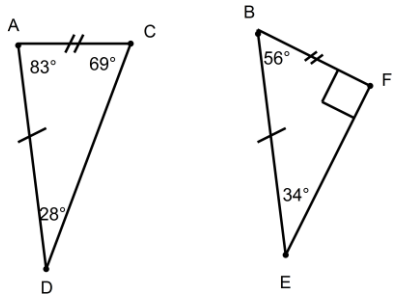

**Reason:** _____

**5.** $\Delta LKG \sim \Delta JKH$**?**



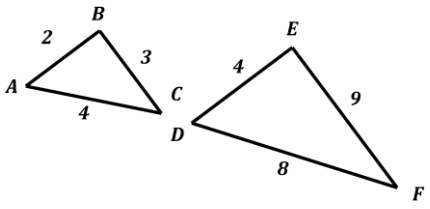

**Reason:** _____

**6.** $\Delta ACD \sim \Delta BFE$**?**



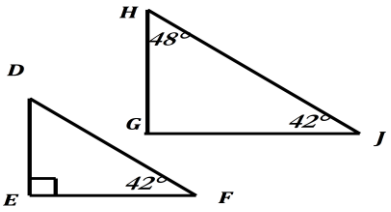

**Reason:** _____

**10.** $\Delta CAB \sim \Delta FDE$**?**



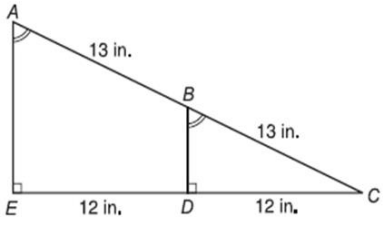

**Reason:** _____

**11.** $\Delta FDE \sim \Delta JHG$**?**



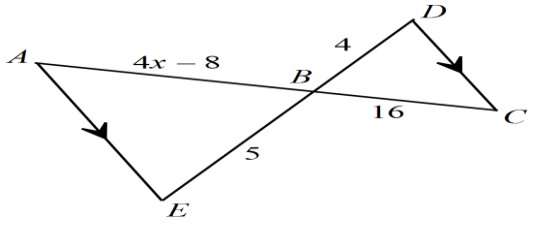

**Reason:** _____

**12.** $\Delta AEC \sim \Delta BDC$**?**



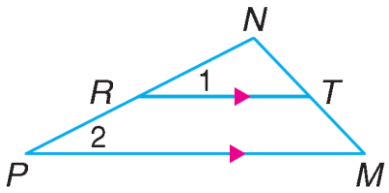

**Reason:** _____

13. Find the value of x if the following triangles are similar.

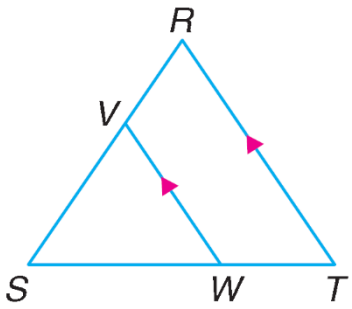


## Day 4 –Proportions and Similar Triangles "Ladder" Triangles

**1. Explain why** $\Delta NRT \sim \Delta NPM$ **.**




**For 2 – 4, complete the follow proportion.**

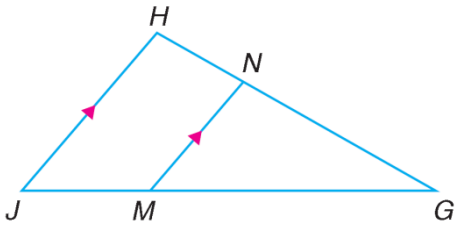



2. $\frac{SV}{SR} = \frac{?}{RT}$

3. $\frac{ST}{SW} = \frac{?}{SV}$

4. $\frac{?}{VW} = \frac{SR}{TR}$

**5. For 5 – 7, complete the following proportions.**



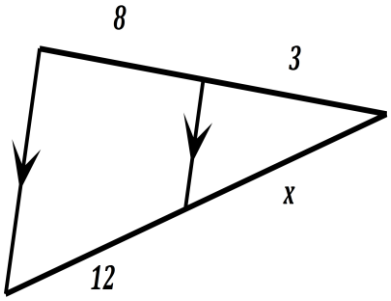

5. $\frac{GN}{NH} = \frac{GM}{?}$

6. $\frac{GJ}{?} = \frac{GH}{GN}$

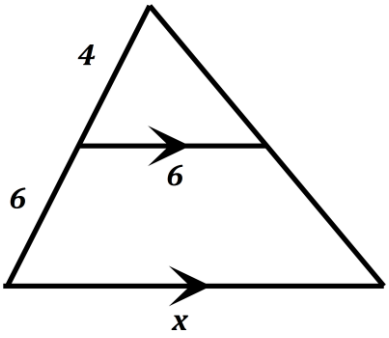
7. $\frac{?}{NH} = \frac{GM}{MJ}$

**For 8 – 12, find the following variables.**

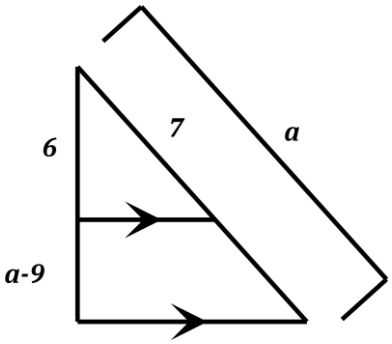
**8.**




**9.**

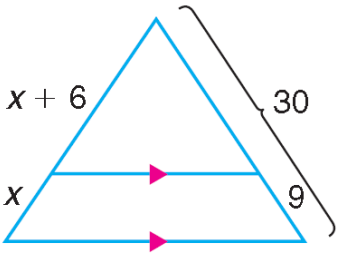



**10.**

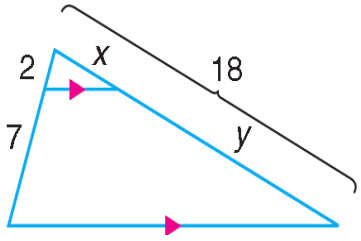



**For 11 – 12, find the following variables.**

**11.**

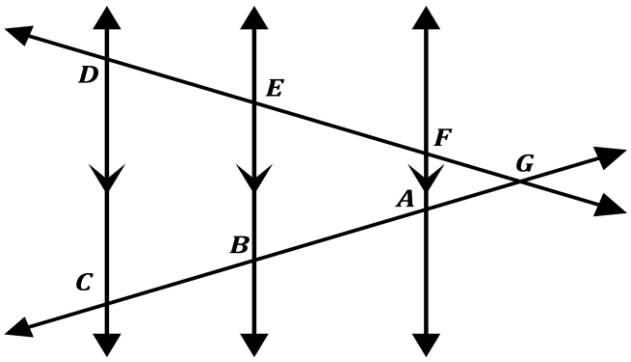



**12.**



## Day 5 Proportions and Similar Triangles: Segment Lengths

**Use the figure to complete the proportions.**




1. $\frac{EF}{FG} = \frac{BA}{?}$

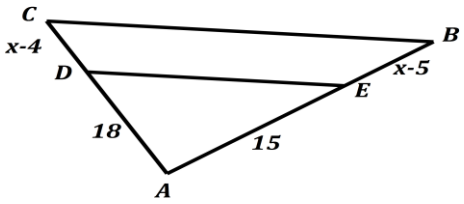
2. $\frac{CB}{BA} = \frac{?}{EF}$

3. $\frac{EB}{FA} = \frac{?}{FG}$

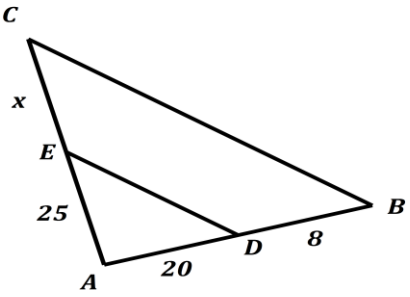
4. $\frac{EG}{ED} = \frac{?}{CB}$

**Determine the value of the variable so that $\overline{DE} \parallel \overline{BC}$**

**5.**



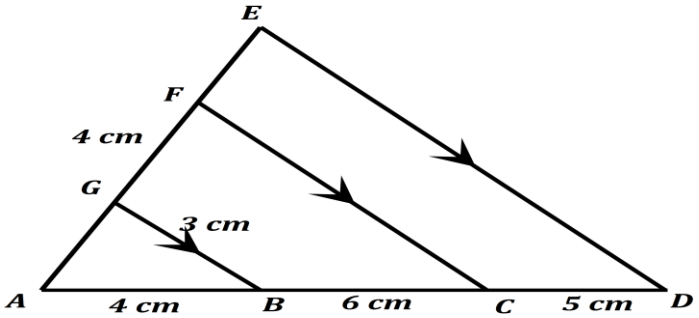

**6.**




**Determine the length of each segment.**

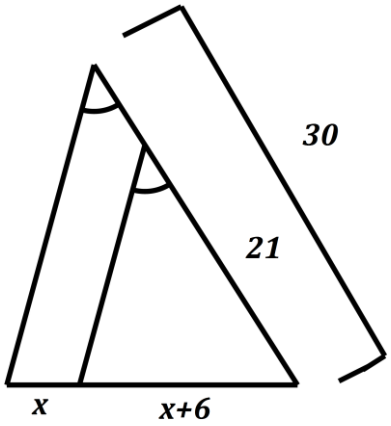
7. $\overline{FE}$

8. $\overline{AF}$




**Find the value of the variable.**

**9.**




**10.**