

March 10, 2014

# Term 3 Review Day 1

Target: Use properties of T3 to solve problems

## 7.1 Ratios and Proportions

1. GAMES A video game store has 60 games to choose from, including 40 sports games. What is the ratio of sports games to video games?

$$\frac{40}{60} = \boxed{2:3}$$

2. The ratio of the measures of the three sides of a triangle is 3:7:5, and its perimeter is 156.8 meters. Find the measure of each side.

$$3x + 7x + 5x = 156.8$$

$$15x = 156.8$$

$$x = \boxed{10.45}$$

3. SCHOOL The ratio of male students to female students in the drama club at Campbell High School is 3:4. If the number of male students in the club is 18, predict the number of female students?

$$\frac{3}{4} = \frac{18}{x}$$

$$\frac{3x}{3} = \frac{72}{3}$$

$$x = \boxed{24 \text{ students}}$$

4. The ratio of the measures of the sides of a triangle is 3:5:7, and its perimeter is 450 centimeters. Find the measures of each side of the triangle.

$$3x + 5x + 7x = 450$$

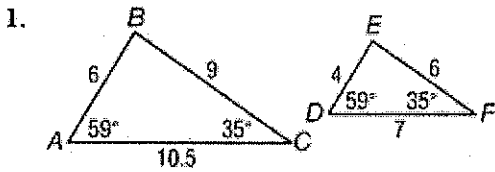
$$15x = 450$$

$$x = 30$$

$$\boxed{\begin{matrix} 90 \\ 150 \\ 210 \end{matrix}}$$

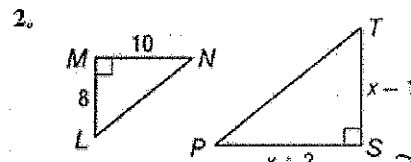
## 7.2 Similar Polygons

Determine whether each pair of figures is similar.



Similar by AA

Each pair of polygons is similar. Find the value of x.



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

$$10(x-1) = 8(x+2)$$

$$10x - 10 = 8x + 16$$

$$-8x \quad -8x$$

$$2x - 10 = 16$$

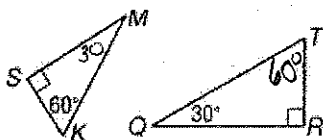
$$2x = 26$$

$$x = \boxed{13}$$

## 7.3 Similar Triangles

Determine whether each pair of triangles is similar. Explain your reasoning.

1.



$$90 + 60 + x = 180$$

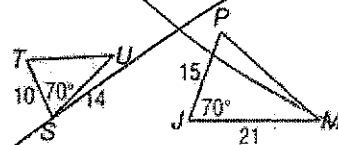
$$150 + x = 180$$

$$-150 \quad -150$$

$x = \boxed{30}$  Similar by AA

Determine whether each pair of triangles is similar. Explain your reasoning.

2.

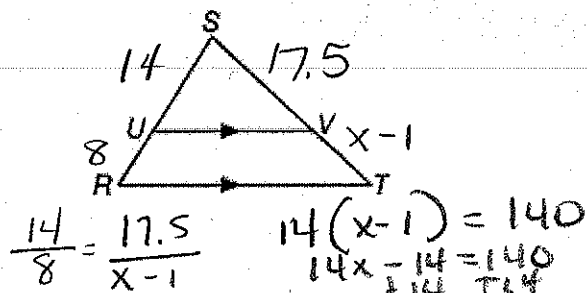


$$2x = 26$$

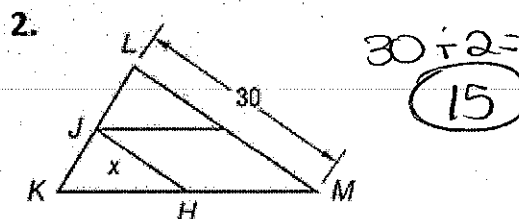
$$x = \boxed{13}$$

## 7.4 Parallel Lines and Proportional Parts

1. If  $RU=8$ ,  $US=14$ ,  $TV=x-1$ , and  $VS=17.5$ , find  $x$  and  $TV$ .



2.  $\overline{JH}$  is a midsegment of  $\triangle KLM$ . Find the value of  $x$ .

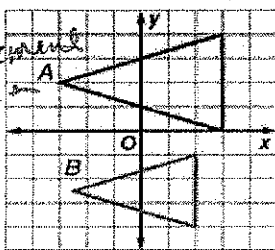


## 7.6 Similarity Transformations

Determine whether the dilation from  $A$  to  $B$  is an enlargement or a reduction.

Then find the scale factor of the dilation.

1.



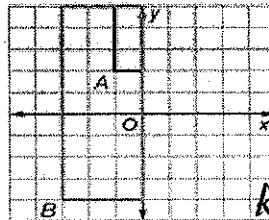
$P = A$   
 $T = B$   
 $A = (-3, 2)$   
 $B = (-2, 3)$   
 $\frac{-2}{-3} = \frac{2}{3}$   
 Reduction

$K > 1$  Enlargement  
 $K < 1$  Reduction  
 $K = \frac{\text{Image}}{\text{Pre-image}}$

Determine whether the dilation from  $A$  to  $B$  is an enlargement or a reduction.

Then find the scale factor of the dilation.

2.



$P = A$   
 $T = B$   
 $A = (-1, 2)$   
 $B = (-3, 4)$   
 $\frac{-3}{-1} = \frac{4}{2}$   
 $K = \frac{3}{1}$

Enlargement

## 7.7 Scale Drawings and Models

Model  
Actual

1. ARCHITECTURE An architect is making a scale model of an office building he wishes to construct. The model is 9 inches tall. The actual office building he plans to construct will be 75 feet tall.

a. What is the scale of the model?

$\frac{9 \text{ in}}{75 \text{ ft} \cdot 12} = \frac{9 \text{ in}}{900 \text{ in}} = \frac{9}{900} = \frac{1}{100}$

2. MODELS Luke wants to make a scale model of a Boeing 747 jetliner. He wants every foot of his model to represent 50 feet. Complete the following table.

Part	Actual length (in.)	Model length (in.)
Wing Span	2537	50.74
Length	2782	55.64
Tail Height	392	7.84

$\frac{1}{50} = \frac{x}{2537}$ 
 $x = 50.74$

$\frac{1}{50} = \frac{x}{2782}$ 
 $x = 55.64$

$\frac{1}{50} = \frac{x}{392}$ 
 $x = 7.84$