

Test Review

Chapter 6

1. Of the 112 students in the marching band, 35 were in the drum section. Find the ratio of drummers to other musicians in the band.

$$\frac{35}{77} = \boxed{\frac{5}{11}}$$

$$112 - 35 = 77$$



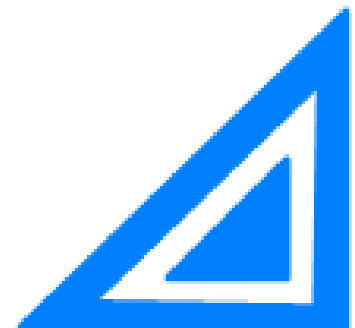
2. The ratio of the measures of the three sides of a triangle is 2:4:5, and its perimeter is 22 meters. Find the measure of each side of the triangle.

$$\begin{matrix} (4) & (8) & (10) \\ 2x & + & 4x & + & 5x & = & 22 \end{matrix}$$

$$\frac{\cancel{11}x}{\cancel{11}} = \frac{22}{\cancel{11}}$$

$$x = 2$$

4m
8m
10m



Solve each proportion.

3. $\frac{3}{4} = \frac{x}{32}$

$$\frac{96}{4} = \frac{\cancel{4}x}{\cancel{4}}$$

$$24 = x$$



Solve each proportion.

4. $\frac{x+3}{8} = \frac{6}{5}$

$$5x + 15 = 48$$
$$\begin{array}{r} -15 \\ -15 \end{array}$$

$$\frac{5x}{5} = \frac{33}{5}$$

$$x = \frac{33}{5}$$

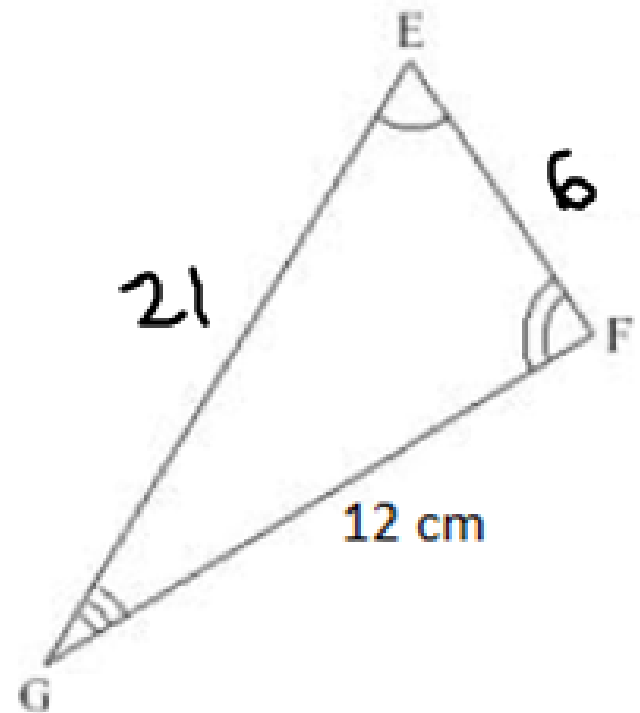
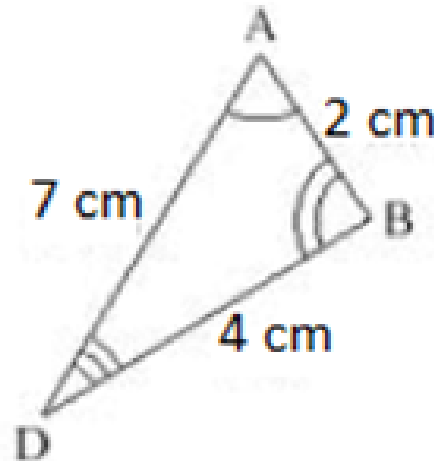


5. If $\triangle ABD \sim \triangle EFG$, find the perimeter of $\triangle EFG$.

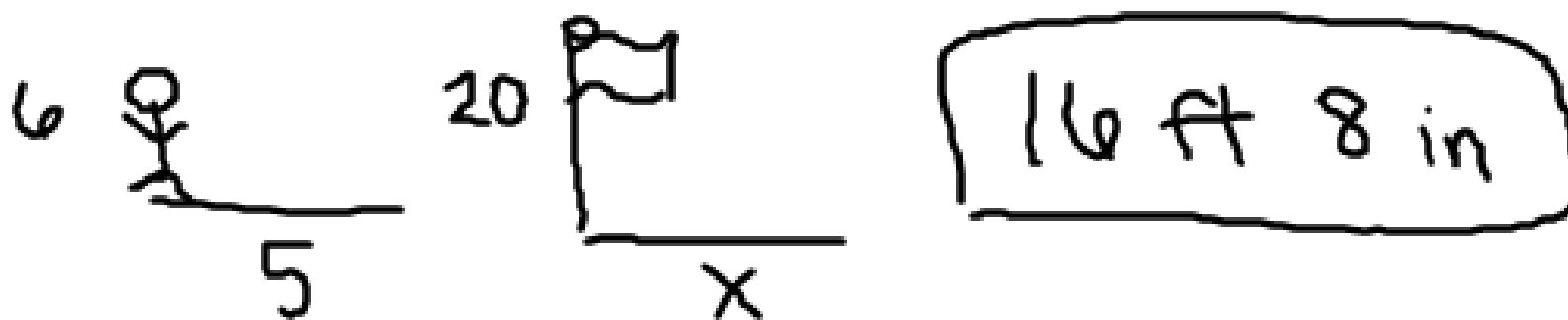
$$\frac{4}{12} = \frac{13}{x}$$

$$4x = 156$$

$$x = 39 \text{ cm}$$



6. A person who is 6 feet tall casts a shadow that is 5 feet long. At the same time, how long is the shadow of a 20-foot flagpole? Give your answer in feet and inches (not a decimal).



$$\frac{6}{5} = \frac{20}{x}$$

$$x = 16\frac{2}{3}$$

$$\frac{6}{6}x = \frac{100}{6}$$

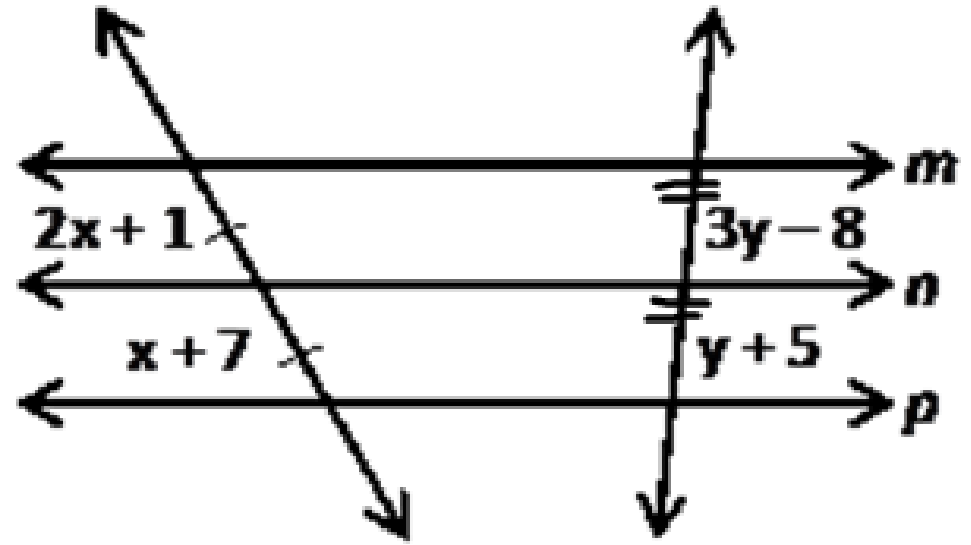


7. If $m \parallel n \parallel p$, find x and y .

$$\begin{array}{r} 2x + 1 = x + 7 \\ -x \quad -x \end{array}$$

$$\begin{array}{r} x + x = 7 \\ \cancel{x} \quad \cancel{x} \\ \hline 1 \quad 1 \end{array}$$

$$\boxed{x = 6}$$



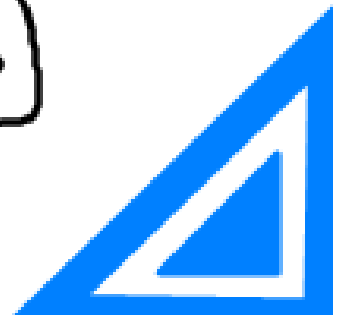
$$\begin{array}{r} 3y - 8 = y + 5 \\ -y \quad -y \end{array}$$

$$\begin{array}{r} 2y - 8 = 5 \\ +8 \quad +8 \end{array}$$

$$\begin{array}{r} 2y = 13 \\ \hline y = 6.5 \end{array}$$

$$y = \frac{13}{2}$$

$$\boxed{y = 6.5}$$



Determine whether $\overline{BC} \parallel \overline{DE}$.

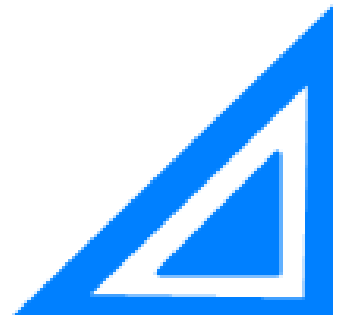
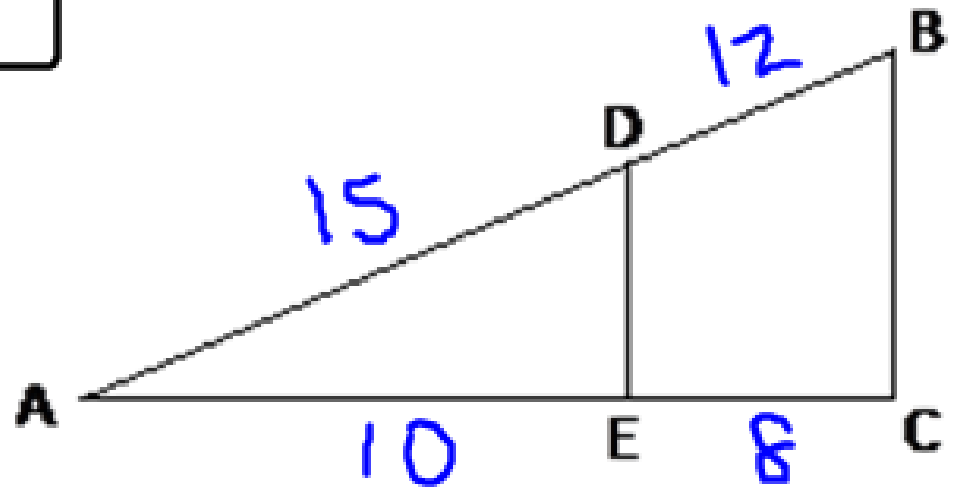
8. $AD = 15$, $DB = 12$, $AE = 10$, $EC = 8$

$$\frac{12}{15} = \frac{8}{10}$$

yes

$$\frac{4}{5} = \frac{4}{5}$$

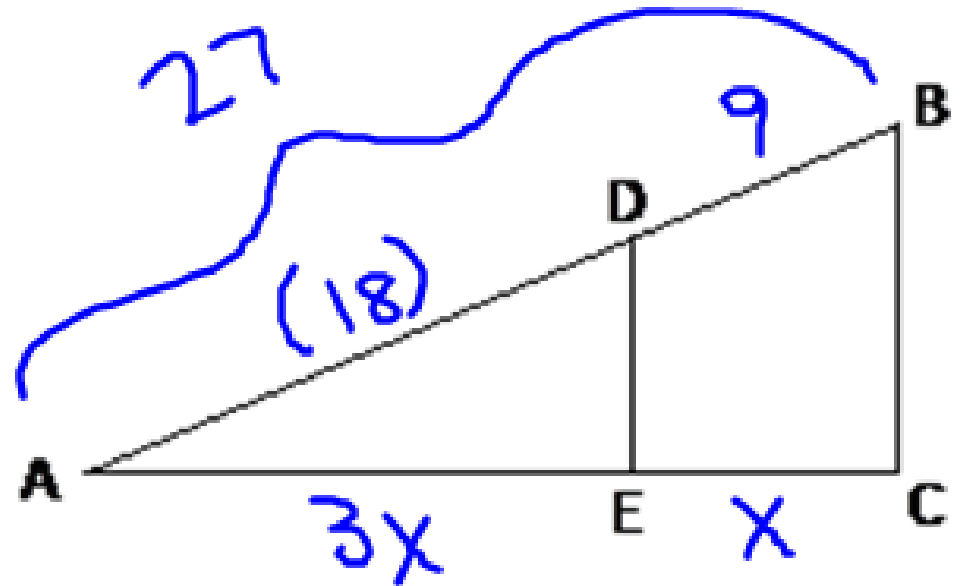
$$120 = 120$$



Determine whether $\overline{BC} \parallel \overline{DE}$.

9. $BD = 9$, $BA = 27$, and CE is one-third of EA

no



10. Find x and TV if $RU = 8$, $US = 14$,
 $TV = x - 1$, and $VS = 17.5$
(11-1)

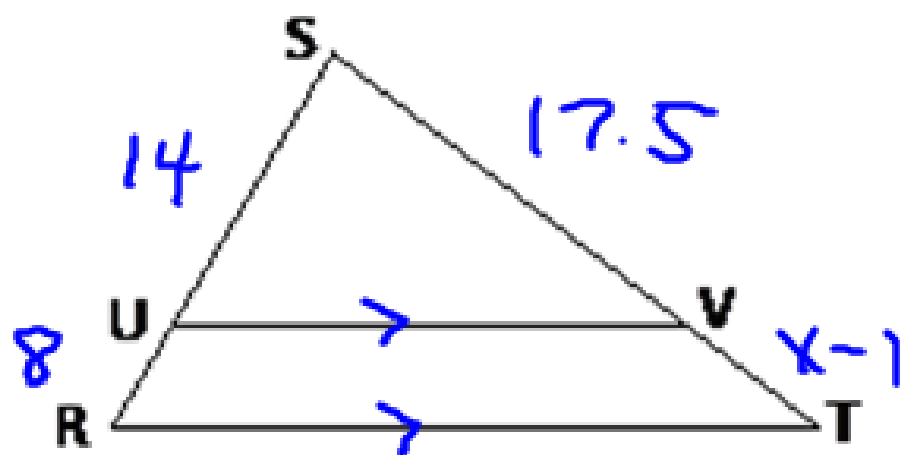
$$\frac{14}{8} = \frac{17.5}{x-1}$$

$$14x - 14 = 140$$

$$14x = 154$$

$$x = 11$$

$$TV = 10$$



Triangle ABC has vertices A(-5, 2), B(1, 8), and C(4, 2). Point D is the midpoint of \overline{AB} and point E is the midpoint of \overline{AC} .

11. Identify the coordinates of D and E.

$$D \left(\frac{-5+1}{2}, \frac{2+8}{2} \right) = (-2, 5)$$

$$E \left(\frac{-5+4}{2}, \frac{2+2}{2} \right) = \left(-\frac{1}{2}, 2 \right)$$



Triangle ABC has vertices A(-5, 2), B(1, 8), and C(4, 2). Point D is the midpoint of \overline{AB} and point E is the midpoint of \overline{AC} .

12. Find the slope of \overline{BC} and \overline{DE} to show that they are parallel.

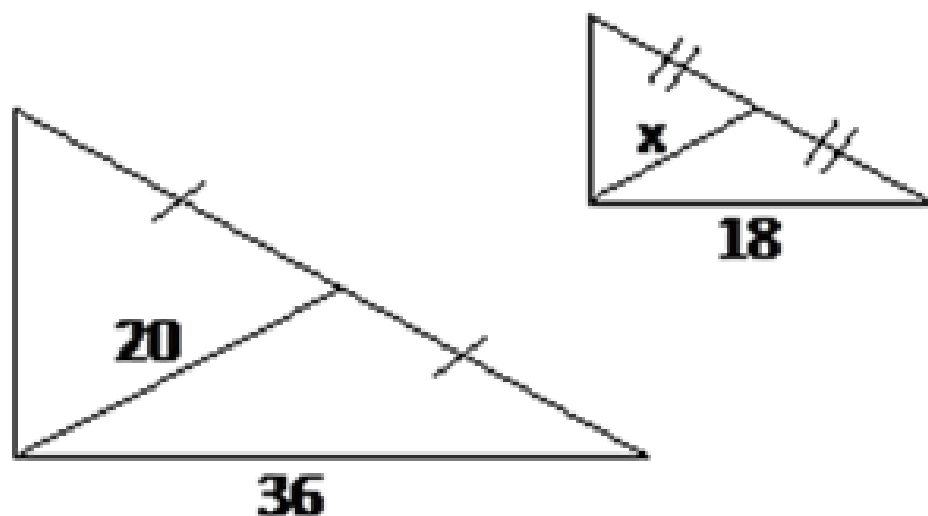
$$BC: \frac{8-2}{1-4} = \frac{6}{-3} = -2$$

$$DE: \frac{5-2}{-2+\frac{1}{2}} = \frac{3}{-\frac{3}{2}} = -2$$



Find x for each pair of similar triangles.

13.



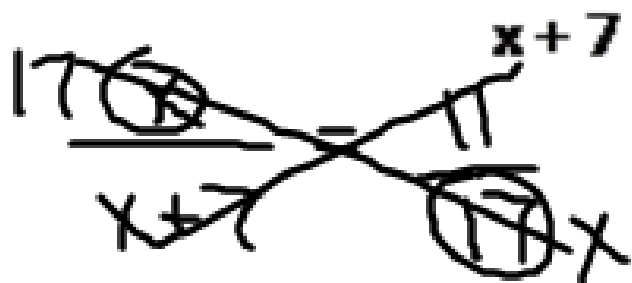
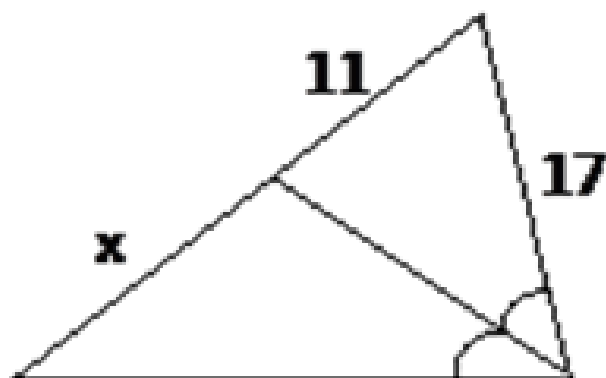
$$\frac{x}{20} = \frac{1}{2}$$

$$\begin{array}{r} 36x = 360 \\ \hline 36 \quad 36 \\ \hline \boxed{x=10} \end{array}$$



Find x for each pair of similar triangles.

14.



$$x = \frac{77}{6}$$

$$\begin{array}{r} 17x = 11(x+7) \\ -11x \quad -11x \\ \hline 6x = 77 \end{array}$$

$$x = 12\frac{5}{6}$$

$$\frac{6x}{6} = \frac{77}{6}$$

$$x = 12.8$$



15. Stages 1 and 2 of a fractal known as the Cantor set are shown. To get Stage 2, the segment in Stage 1 is trisected, and the middle segment is removed. The process is repeated for subsequent stages.

Stage 1 

Stage 2 

Draw stages 3 and 4 of the Cantor set.

Stage 3 

Stage 4 

