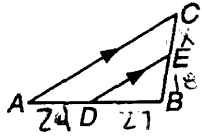


Name _____
Date _____

Similar Triangles & "BIG AL" - Homework

1. If $AD = 24$, $DB = 27$, and $EB = 18$, find CE .

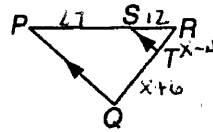


$$\frac{24}{x} = \frac{27}{18}$$

$$\frac{27x}{27} = \frac{432}{27}$$

$$x = 16$$

2. Find x , QT , and TR if $QT = x + 6$, $SR = 12$, $PS = 27$, and $TR = x - 4$.



$$\frac{x+6}{27} = \frac{x-4}{12}$$

$$12(x+6) = 27(x-4)$$

$$-12x \quad -12x$$

$$72 = 15x - 108$$

$$+108 \quad +108$$

$$18 = 15x \quad \boxed{12=x}$$

$$x+6 = 18$$

$$x-4 = 8$$

Determine whether $\overline{JK} \parallel \overline{NM}$.

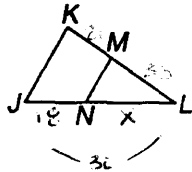
3. $JN = 18$, $JL = 30$, $KM = 21$, and $ML = 35$

$$\frac{18}{27} = \frac{30}{56}$$

Cross Products $\Rightarrow 27(30) = 18(56)$

$$810 = 1008$$

\overline{JK} is NOT \parallel to \overline{NM}



$$7. \quad \text{Note: } \begin{array}{r} 3 \\ \hline \frac{2}{3} + 3 \\ \hline \end{array} = \begin{array}{r} 3 \\ \hline \frac{1}{3} + 6 \\ \hline \end{array}$$

$$2y + 9 = y + 18$$

$$\begin{array}{r} -y \\ \hline \end{array}$$

$$y + 9 = 18$$

$$\begin{array}{r} -9 \\ \hline \end{array}$$

$$\boxed{y = 9}$$

$$\frac{3x-4}{9} = \frac{\frac{5}{4}x+8}{9}$$

$$4 \left[\frac{27x-4}{4} \right] = 4 \left[\frac{45}{4}x + \frac{27}{4} \right]$$

$$108x - 16 = 45x + 108$$

$$\begin{array}{r} -45x \\ \hline \end{array}$$

$$63x - 16 = 108$$

$$\begin{array}{r} +16 \\ \hline \end{array}$$

$$63x = 124$$

$$\boxed{x = 2}$$

$$8. \quad \begin{array}{r} 3x-4 = x+1 \\ -x \quad -x \\ \hline \end{array}$$

$$2x - 4 = 1$$

$$\begin{array}{r} +4 \\ \hline \end{array}$$

$$2x = 5$$

$$\boxed{x = 2.5}$$

$$3(2.5) - 4 \quad 2.5 + 1$$

$$= 7.5 - 4 \quad = 3.5$$

$$= 3.5$$

$$\frac{2.5}{\frac{4}{3} + 2} = \frac{2.5}{4 - 4}$$

$$3 \left[\frac{10}{3}y + \frac{3}{5} \right] = 3 \left[10y - \frac{10}{5} \right]$$

$$10y + 15 = 30y - 30$$

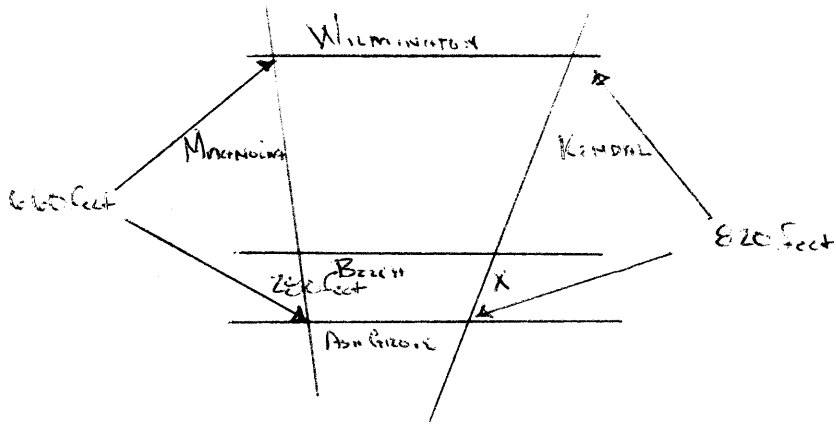
$$\begin{array}{r} -10y \\ \hline \end{array} \quad 15 = 20y - 30$$

$$15 = 20y - 30$$

$$\begin{array}{r} +30 \\ \hline \end{array}$$

$$45 = 20y$$

$$\boxed{2.25 = y}$$

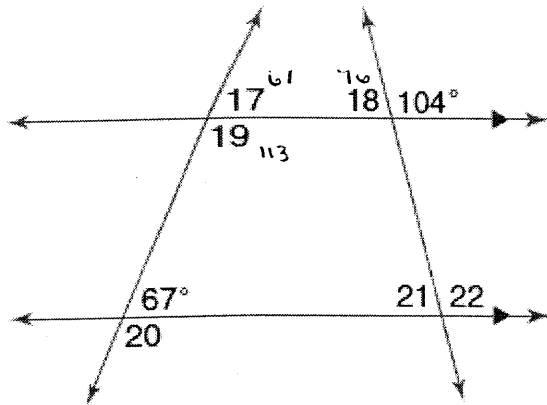


$$\frac{280}{x} = \frac{660}{820}$$

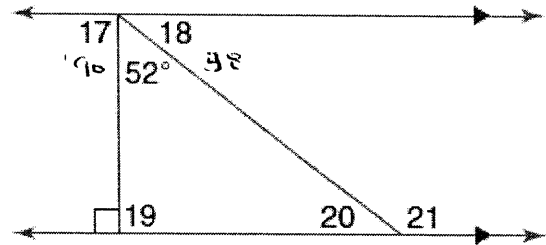
$$660x = 280(820)$$

Graphing Parabolas - Calculator

Quality - Accuracy - Transfer

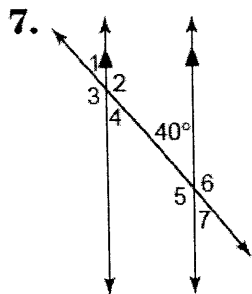


- 17. 67°
- 18. 76°
- 19. 113°
- 20. 113°
- 21. 76°
- 22. 104°



- 17. 90°
- 18. 38° = 180 - 90 - 52
- 19. 90°
- 20. 38°

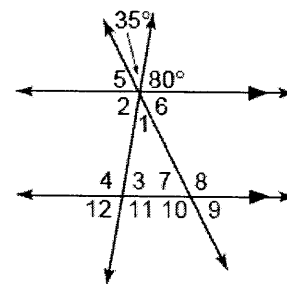
Find the measure of each numbered angle.



Show all work and Organize Solutions

- $\angle 1 = 40^\circ$
- $\angle 2 = 140^\circ$
- $\angle 3 = 140^\circ$
- $\angle 4 = 40^\circ$
- $\angle 5 = 140^\circ$
- $\angle 6 = 140^\circ$
- $\angle 7 = 40^\circ$
- $\angle 8 =$

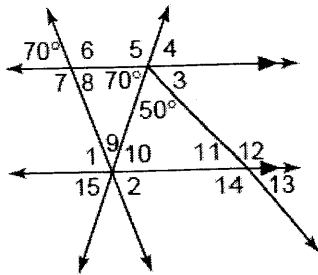
8.



- $\angle 1 = 35^\circ$
- $\angle 2 = 80^\circ$
- $\angle 3 = \overline{\parallel} 80^\circ$
- $\angle 4 = 100^\circ$
- $\angle 5 = 65^\circ$
- $\angle 6 = 65^\circ$

- $\angle 7 = 65^\circ$
- $\angle 8 = 115^\circ$
- $\angle 9 = 65^\circ$
- $\angle 10 = 115^\circ$
- $\angle 11 = 100^\circ$
- $\angle 12 = 80^\circ$

9.

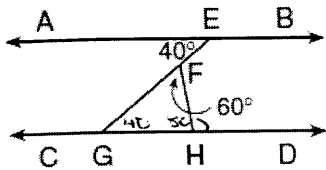


- $\angle 1 = 70^\circ$
- $\angle 2 = 70^\circ$
- $\angle 3 = 60^\circ$
- $\angle 4 = 70^\circ$
- $\angle 5 = 110^\circ$
- $\angle 6 = 110^\circ$
- $\angle 7 = 110^\circ$
- $\angle 8 = 70^\circ$
- $\angle 9 = 40^\circ$
- $\angle 10 = 70^\circ$
- $\angle 11 = 60^\circ$
- $\angle 12 = 120^\circ$
- $\angle 13 = 60^\circ$
- $\angle 14 = 120^\circ$
- $\angle 15 = 70^\circ$

Show all work and Organize Solutions

Extra Practice Section:

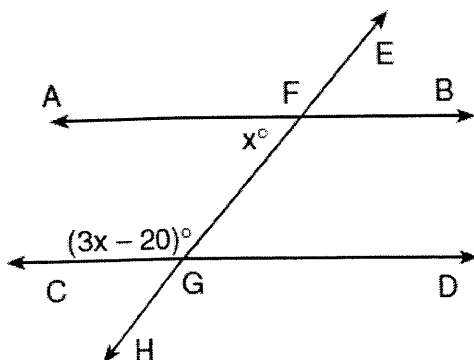
4 In the accompanying diagram, $\overline{AE} \parallel \overline{CGHD}$, \overline{EFG} and \overline{FH} are drawn, $m\angle AEF = 40$, and $m\angle CFH = 60$. Find $m\angle FHD$.



$\angle FHD = 100$

[3rd Angle of a Triangle]

4 In the accompanying diagram, $\overline{AB} \parallel \overline{CD}$, \overline{EFCH} is a transversal, $m\angle AFG = x$, and $m\angle CGF = 3x - 20$. Find the value of x .



$x + (3x - 20) = 180$

$x + 3x - 20 = 180$

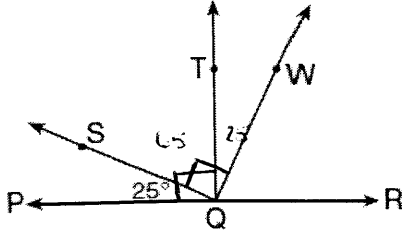
$4x - 20 = 180$
 $+ 20 + 20$

$4x = 200$

$x = 50$

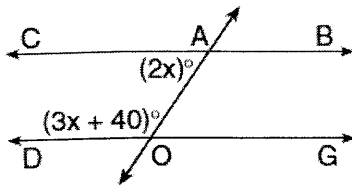
- $\angle 1 = 102^\circ$
- $\angle 2 = 78^\circ$
- $\angle 3 = 102^\circ$
- $\angle 4 = 78^\circ$
- $\angle 5 = 102^\circ$
- $\angle 6 = 78^\circ$
- $\angle 7 = 102^\circ$
- $\angle 8 = 102^\circ$
- $\angle 9 = 78^\circ$
- $\angle 10 = 102^\circ$
- $\angle 11 = 78^\circ$
- $\angle 12 = 102^\circ$
- $\angle 13 = 102^\circ$
- $\angle 14 = 78^\circ$

- 2 In the accompanying diagram, $\overline{QT} \perp \overline{PQR}$ at Q , $\overline{QW} \perp \overline{QS}$ at Q , and $m\angle SQP = 25$. Find $m\angle TQW$.



$$\begin{aligned} \angle SQT &= 65^\circ \\ \angle TQW &= 25^\circ \\ \angle WQR &= 65^\circ \end{aligned}$$

- 7 In the accompanying diagram, \overline{CAB} is parallel to \overline{DOG} , \overline{AO} is a transversal, $m\angle CAO = 2x$, and $m\angle DOA = 3x + 40$. Find $m\angle CAO$.



$$(2x) + (3x + 40) = 180$$

$$\angle CAO = 2x = 56^\circ$$

$$2x + 3x + 40 = 180$$

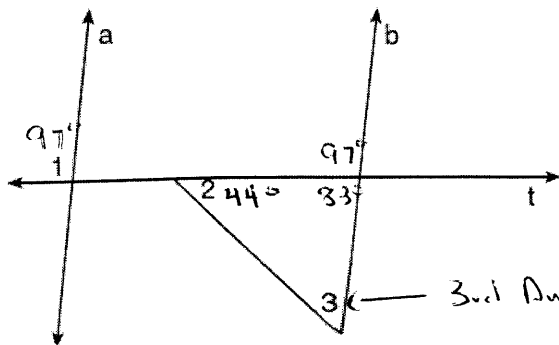
$$5x + 40 = 180$$

$$-40 \quad -40$$

$$5x = 140$$

$$x = 28$$

- 2 In the accompanying diagram, line a is parallel to line b , and line t is a transversal. If $m\angle 1 = 97$ and $m\angle 2 = 44$, find $m\angle 3$.



$$3 \leftarrow \text{3rd Angle of } \triangle$$

$$= 180 - 44 - 83$$

$$= 53^\circ$$