

Name:

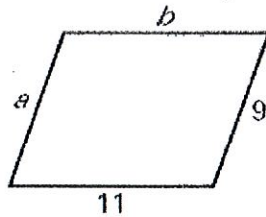
Period:

Date:

Practice Worksheet:
How do you use properties of parallelograms to solve problems?

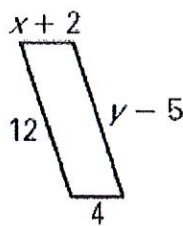
Find the value of each variable in the parallelogram.

1.



$$\begin{array}{l} a=9 \\ b=11 \end{array}$$

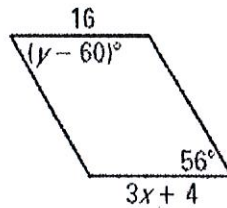
2.



$$\begin{array}{r} x+2=4 \\ -2 \quad -2 \\ \hline x=2 \end{array}$$

$$\begin{array}{r} y-5=12 \\ +5 \quad +5 \\ \hline y=17 \end{array}$$

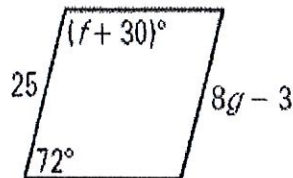
3.



$$\begin{array}{r} 3x+4=16 \\ -4 \quad -4 \\ \hline 3x=12 \\ \frac{3x}{3} = \frac{12}{3} \\ x=4 \end{array}$$

$$\begin{array}{r} y-60=56 \\ +60 \quad +60 \\ \hline y=116^\circ \end{array}$$

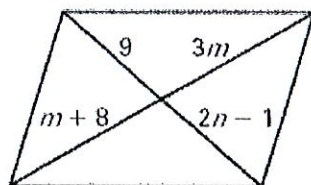
4.



$$\begin{array}{r} 8g-3=25 \\ +3 \quad +3 \\ \hline 8g=28 \\ \frac{8g}{8} = \frac{28}{8} \\ g=3.5 \end{array}$$

$$\begin{array}{r} f+30+72=180 \\ f+102=180 \\ -102 \quad -102 \\ \hline f=78^\circ \end{array}$$

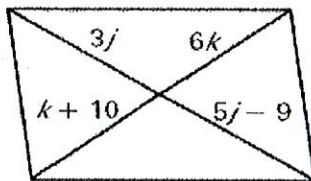
5.



$$\begin{array}{r} 2n-1=9 \\ +1 \quad +1 \\ \hline 2n=10 \\ \frac{2n}{2} = \frac{10}{2} \\ n=5 \end{array}$$

$$\begin{array}{r} 3m=m+8 \\ -m \quad -m \\ \hline 2m=8 \\ \frac{2m}{2} = \frac{8}{2} \\ m=4 \end{array}$$

6.

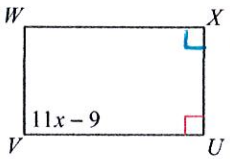


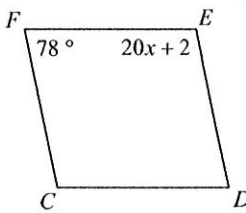
$$\begin{array}{r} 3j=5j-9 \\ -5j \quad -5j \\ \hline -2j=-9 \\ -2 \quad -2 \\ \hline j=4.5 \end{array}$$

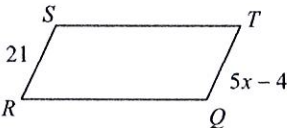
$$\begin{array}{r} 6k=k+10 \\ -k \quad -k \\ \hline 5k=10 \\ \frac{5k}{5} = \frac{10}{5} \\ k=2 \end{array}$$

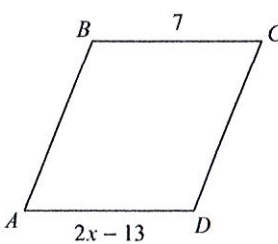
2.1 - Practice

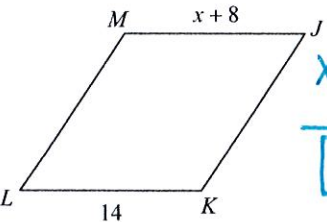
Solve for x. Each figure is a parallelogram.

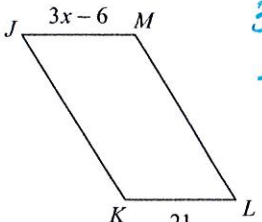
1) 
$$\begin{aligned} 11x - 9 &= 90 \\ +9 &+9 \\ \hline 11x &= 99 \\ \frac{11x}{11} &= \frac{99}{11} \\ \hline x &= 9 \end{aligned}$$

2) 
$$\begin{aligned} 20x + 2 + 78 &= 180 \\ 20x + 80 &= 180 \\ -80 &-80 \\ \hline 20x &= 100 \\ \frac{20x}{20} &= \frac{100}{20} \\ \hline x &= 5 \end{aligned}$$

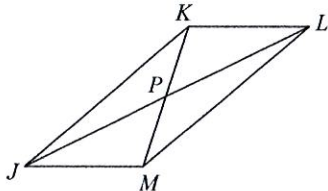
3) 
$$\begin{aligned} 5x - 4 &= 21 \\ +4 &+4 \\ \hline 5x &= 25 \\ \frac{5x}{5} &= \frac{25}{5} \\ \hline x &= 5 \end{aligned}$$

4) 
$$\begin{aligned} 2x - 13 &= 7 \\ +13 &+13 \\ \hline 2x &= 20 \\ \frac{2x}{2} &= \frac{20}{2} \\ \hline x &= 10 \end{aligned}$$

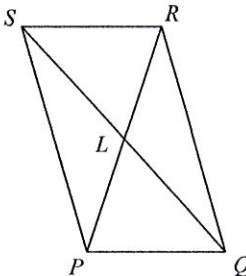
5) 
$$\begin{aligned} x + 8 &= 14 \\ -8 &-8 \\ \hline x &= 6 \end{aligned}$$

6) 
$$\begin{aligned} 3x - 6 &= 21 \\ +6 &+6 \\ \hline 3x &= 27 \\ \frac{3x}{3} &= \frac{27}{3} \\ \hline x &= 9 \end{aligned}$$

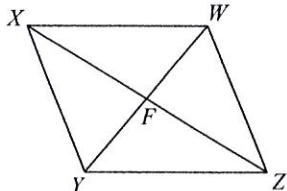
7) $KM = 20$
 $PM = x - 1$
 $x - 1 + x - 1 = 20$
 $2x - 2 = 20$
 $+2 \quad +2$
 $\hline 2x = 22$
 $\frac{2x}{2} = \frac{22}{2}$
 $\hline x = 11$



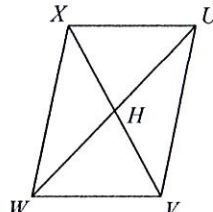
8) $RP = 32$
 $LP = 2x - 4$
 $2x - 4 + 2x - 4 = 32$
 $4x - 8 = 32$
 $+8 \quad +8$
 $\hline 4x = 40$
 $\frac{4x}{4} = \frac{40}{4}$
 $\hline x = 10$



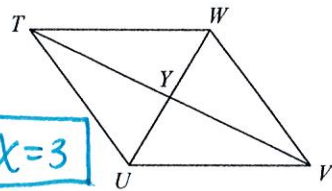
9) $FW = 16$
 $YW = 4x$
 $16 + 16 = 4x$
 $32 = 4x$
 $\frac{32}{4} = \frac{4x}{4}$
 $8 = x$
 $\hline x = 8$



10) $VH = 17$
 $HX = 2x + 1$
 $2x + 1 = 17$
 $-1 \quad -1$
 $\hline 2x = 16$
 $\frac{2x}{2} = \frac{16}{2}$
 $\hline x = 8$



11) $YT = 19$
 $VT = 13x - 1$
 $19 + 19 = 13x - 1$
 $38 = 13x - 1$
 $+1 \quad +1$
 $\hline 39 = 13x$
 $\frac{39}{13} = \frac{13x}{13}$
 $3 = x$



12) $UC = 23$
 $CW = 2x + 1$
 $2x + 1 = 23$
 $-1 \quad -1$
 $\hline 2x = 22$
 $\frac{2x}{2} = \frac{22}{2}$
 $\hline x = 11$

