

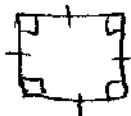
Welding Squaring Material Quiz

Name

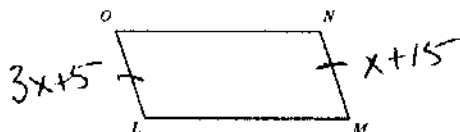
Key

1. What type of quadrilateral has all sides and all angles congruent?

Square



2. $LMNO$ is a parallelogram. If $NM = x + 15$ and $OL = 3x + 5$ find the value of x and then find NM and OL .



$$\begin{aligned} NM &= OL \\ x + 15 &= 3x + 5 \\ -x &\quad -x \\ \hline 15 &= 2x + 5 \\ -5 &\quad -5 \\ \hline 10 &= 2x \end{aligned}$$

$$2x = 10 \rightarrow \frac{2x}{2} = \frac{10}{2}$$

$$x = 5$$

$$NM = 5 + 15 = 20$$

$$OL = 3(5) + 5 = 15 + 5 = 20$$

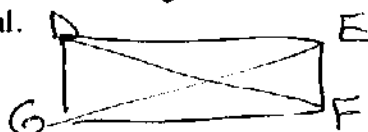
a. $x = 7, NM = 20, OL = 22$

c. $x = 7, NM = 22, OL = 22$

b. $x = 5, NM = 20, OL = 20$

d. $x = 5, NM = 22, OL = 20$

3. $DEFG$ is a rectangle. $DF = 5x - 5$ and $EG = x + 11$. Find the value of x and the length of each diagonal.



$$\begin{aligned} DF &= EG \\ 5x - 5 &= x + 11 \\ -x &\quad -x \\ \hline 4x - 5 &= 11 \\ +5 &\quad +5 \\ \hline 4x &= 16 \end{aligned}$$

$$DF = 5(4) - 5 = 20 - 5 = 15$$

$$EG = 4 + 11 = 15$$

a. $x = 4, DF = 13, EG = 13$

c. $x = 4, DF = 15, EG = 15$

b. $x = 4, DF = 15, EG = 18$

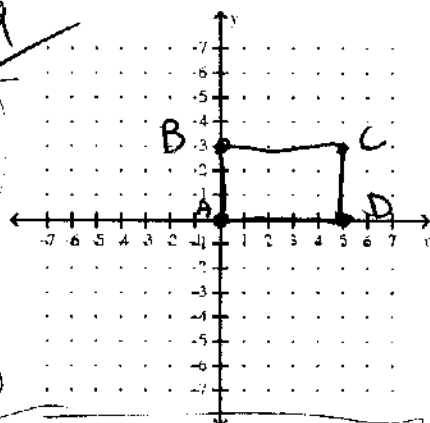
d. $x = 2, DF = 13, EG = 13$

$$\frac{4x}{4} = \frac{16}{4}$$

$$x = 4$$

4. Prove that quadrilateral $ABCD$ with $A(0, 0)$, $B(0, 3)$, $C(5, 3)$, and $D(5, 0)$ is a rectangle. Show work.

ANS VARY



Could find $AC = BD$ using distance formula

$$m_{AB} = \frac{3-0}{0-0} = \text{undefined}$$

$$m_{BC} = \frac{3-3}{5-0} = \frac{0}{5} = 0$$

$$m_{CD} = \frac{0-3}{5-5} = \frac{-3}{0} = \text{undefined}$$

$$m_{AD} = \frac{0-0}{5-0} = \frac{0}{5} = 0$$

$$\overline{AB} \parallel \overline{CD}$$

because slopes are equal

$$\overline{BC} \parallel \overline{AD}$$

$$\overline{AB} \perp \overline{BC}$$

because 0 and undefined \perp

$$\overline{BC} \perp \overline{CD}$$

$$\overline{CD} \perp \overline{AD}$$

$$\overline{AB} \perp \overline{AD}$$