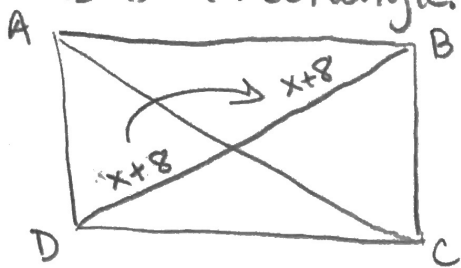


Unit 3 Review (More Practice Problems)

- ① ABCD is a rectangle. $m\widehat{AC} = 32$. Find x



Diagonals are congruent so $\overline{AC} \cong \overline{BD}$

$$BD = 32 = 2(x+8) \rightarrow \text{Solve for } x$$

$$\frac{32}{2} = \frac{2(x+8)}{2}$$

$$\begin{array}{r} 16 = x+8 \\ -8 \quad -8 \\ \hline x = 8 \end{array}$$

- ② Find the sum of the interior angle measures for a regular undecagon (11-sides). Then find the measure of one interior angle.

Use polygon sum $(n-2)180$

$$(11-2)180 = 9(180) = \boxed{1620^\circ}$$

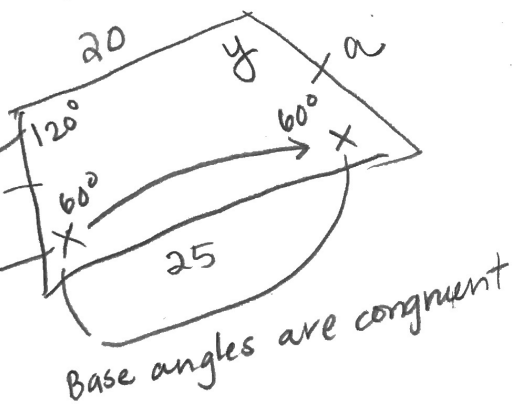
To find one interior angle

$$\frac{\text{total sum}}{\# \text{ of sides}} = \frac{1620^\circ}{11} \approx \boxed{147.27^\circ}$$

③

$$\begin{array}{l} -120^\circ = 180^\circ \\ -120^\circ = 180^\circ \\ \hline x = 60^\circ \end{array}$$

consecutive angles between bases add to 180°



$$\text{Perimeter} = 55$$

$$a = \underline{5}$$

$$x = \underline{60^\circ}$$

$$y = \underline{120^\circ}$$

$$x+y = 180^\circ \Rightarrow 60+y = 180$$

To find a ,

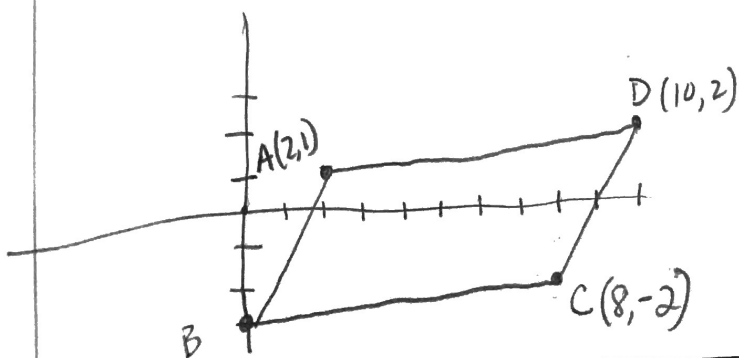
$$20+a+25+a = 55$$

$$\begin{array}{r} 2a + 45 = 55 \\ -45 \quad -45 \\ \hline 2a = 10 \end{array}$$

$$\frac{2a}{2} = \frac{10}{2}$$

$$a = 5$$

- ④ Given $A(2,1)$, $C(8,-2)$, and $D(10,2)$. Find point B such that ABCD is a parallelogram. (I had a mistake in the original problem)



$$\overline{AD} \parallel \overline{BC} \quad \text{slope of } \overline{AD} = \frac{2-1}{10-2} = \frac{1}{8}$$

$$\text{slope of } \overline{BC} = \frac{-2-y}{8-x} = \frac{1}{8}$$

$$\begin{array}{r} -2-y = 1 \\ +2 \\ \hline -y = 3 \end{array} \quad \boxed{y = -3}$$

$$8-x = 8 \quad \boxed{x = 0}$$

$$\boxed{B(0,0)}$$

Check your work by seeing if $\overline{BA} \parallel \overline{CD}$

$$\text{slope of } \overline{BA} = \frac{1 - (-3)}{2 - 0} = \frac{4}{2} = \boxed{2} \quad \text{slope of } \overline{CD} = \frac{2 - (-2)}{10 - 8} = \frac{4}{2} = \boxed{2}$$

✓ The solution is good.