

Mod 9 Review

Name: _____ Per. _____

For Problems 1-4, PQRS is a parallelogram. Find each value.

1. $x = \underline{3}$
2. $n = \underline{10}$
3. $m\angle S = \underline{100}$
4. $m\angle Q = \underline{100}$

$$2x = x + 3$$

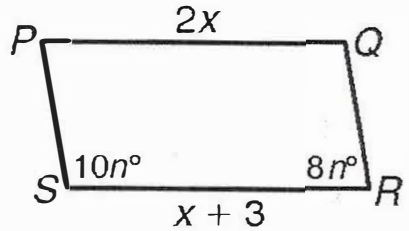
$$x = 3$$

$$10n + 8n = 180$$

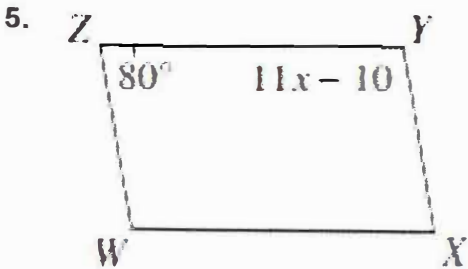
$$18n = 180$$

$$n = 10$$

$$m\angle S = 10(10) = 100$$



For Problems 5-6, find the value of each variable in the parallelogram.

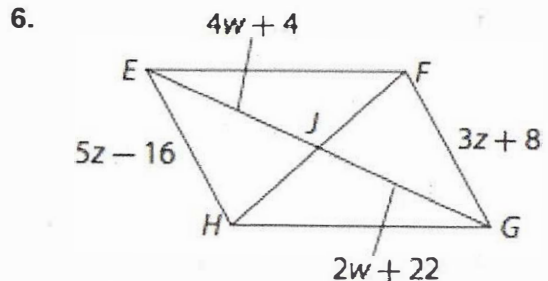


$$80 + 11x - 10 = 180$$

$$11x + 70 = 180$$

$$11x = 110$$

$$x = 10$$



$$4w + 4 = 2w + 22$$

$$2w = 18$$

$$w = 9$$

$$5z - 16 = 3z + 8$$

$$2z = 24$$

$$z = 12$$

For Problems 7-10, VWXY is a rhombus. Find each value.

7. $m = \underline{8}$
8. $n = \underline{14}$
9. $m\angle WVX = \underline{44}$
10. $m\angle YVW = \underline{88}$

$$6m - 12 = 4m + 4$$

$$2m = 16$$

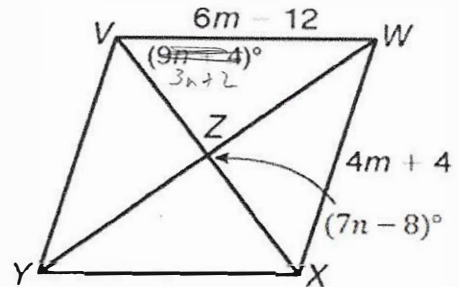
$$m = 8$$

$$7n - 8 = 90$$

$$7n = 98$$

$$n = 14$$

$$m\angle WVX = 3(14) + 2 = 44$$

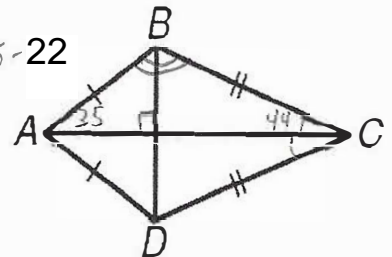


In Problems 11-13, ABCD is a kite with $m\angle BAC = 35^\circ$ and $m\angle BCD = 44^\circ$. Find each value.

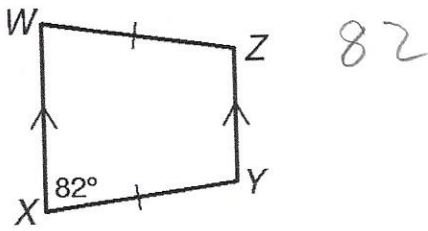
11. $m\angle ABD$
 $= 180 - 35 - 90$
 $= 55^\circ$

12. $m\angle DCA = \underline{22}$

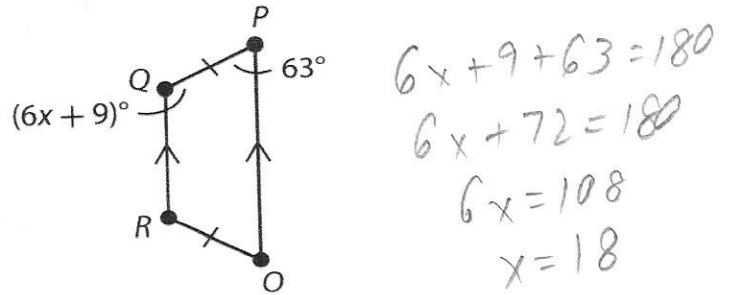
13. $m\angle ABC$
 $= 180 - 35 - 22$
 $= 123$



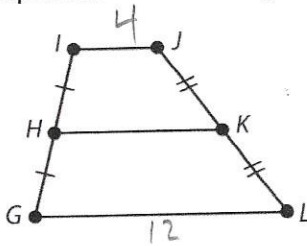
14. Find $m\angle W$ in the trapezoid below.



15. Find the value of x in the trapezoid below.



16. $GILJ$ is a trapezoid with mid-segment \overline{HK} .

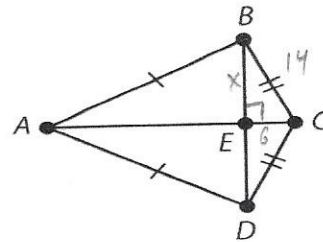


If $IJ = 4$ and $GL = 12$, find HK .

$$HK = \frac{1}{2}(4 + 12) = 8$$

17. $ABCD$ is a kite.

- Find $m\angle BEC$.
- If $BC = 14$ and $EC = 6$, find BE .



$$\begin{aligned} x^2 + 6^2 &= 14^2 \\ x^2 + 36 &= 196 \\ x^2 &= 160 \\ x &= \sqrt{160} = 12.6 \end{aligned}$$