9.3 Arcs and Angles Guided Practice

Name: Key

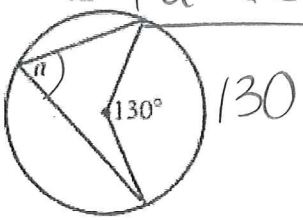
Date: _____ **Period:** _____

Learning Targets – Arc and Angles

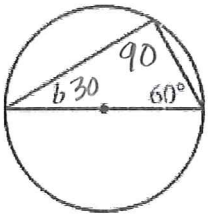
- I can identify and apply the relationships between inscribed angles and intercepted arcs (including semicircles).
- I can identify and apply the relationships of angles in an inscribed quadrilateral.

Use your new conjectures to solve Exercises 1–17. For each exercise, explain how you determined your answer.

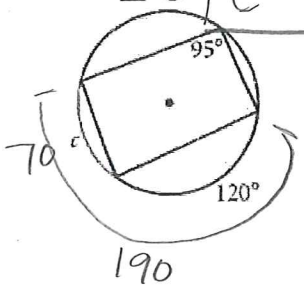
1. $a = ?$ $a = 65°$



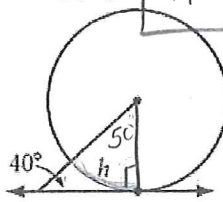
2. $b = ?$ $b = 30°$



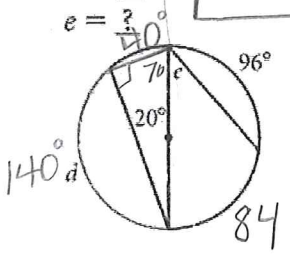
3. $c = ?$ (h) $c = 70°$



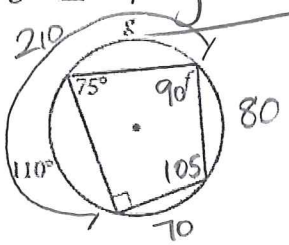
4. $h = ?$ (h) $h = 50°$



5. $d = ?$ $e = ?$ $d = 140°$ $e = 42°$

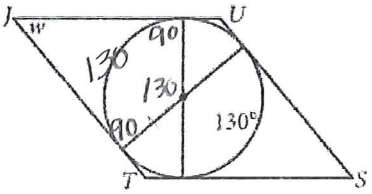


6. $f = ?$
$g = ?$



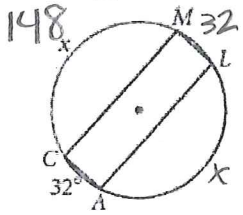
$f = 90°$
$g = 100°$

7. *JUST* is a rhombus.
$w = ?$



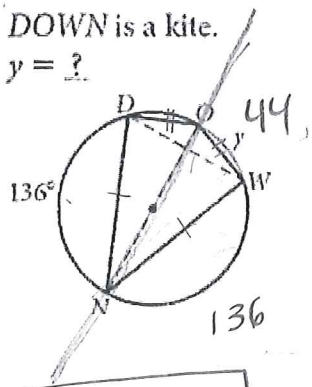
$w = 50°$

8. *CALM* is a rectangle.
$x = ?$



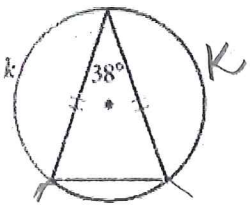
$32 + 32 + x + x = 360$
$2x = 296$
$x = 148°$

9. *DOWN* is a kite.
$y = ?$



$y = 44°$

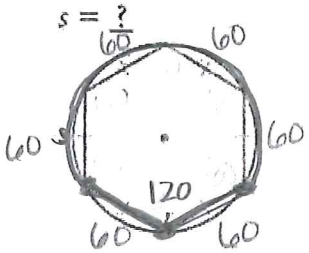
10. $k = ?$



76

$76 + 2K = 360$
$\frac{2K}{2} = \frac{284}{2}$
$K = 142°$

11. $r = ?$
$s = ?$



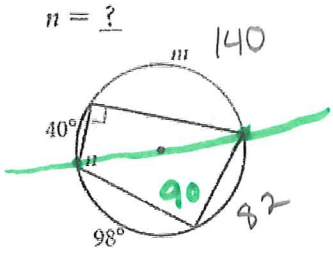
6 sides

$\frac{360}{6} = 60$

$S = 60°$

$\frac{240}{2} =$ $r = 120°$

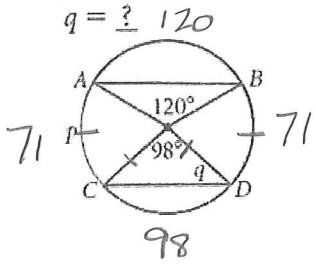
12. $m = ?$
$n = ?$



$n = \frac{1}{2}(140+82)$

$n = 111°$
$m = 140°$

13. $\overline{AB} \parallel \overline{CD}$
$p = ?$
$q = ?$ 120



$120 + 98 + 2p = 360$

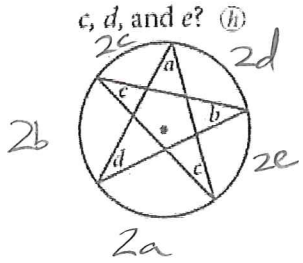
$218 + 2p = 360$

$\frac{2p}{2} = \frac{142}{2}$

$98 + 2q = 180$
$2q = 82 \rightarrow$

$p = 71°$
$q = 41°$

14. What is the sum of a, b, c, d, and e? (h)

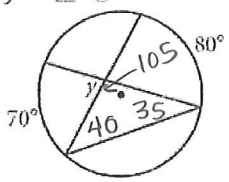


$2a+2b+2c+2d+2e = 360$

$\frac{2(a+b+c+d+e)}{2} = \frac{360}{2}$

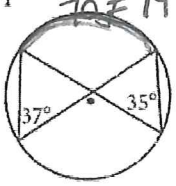
$a+b+c+d+e = 180$

15. $y = ?$ (h)



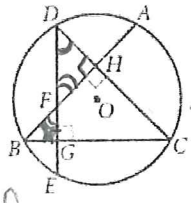
$y = 75°$

16. What's wrong with this picture?



Since the the inscribed angles share the exact same intercepted arc, they should be $\cong$.

17. Is $\overset{\frown}{AC} \cong \overset{\frown}{CE}$? Explain.



By AA~
$\Delta DHF \sim \Delta BGF$.
Therefore $\angle D \cong \angle B$
and their intercepted arcs are also $\cong$
Yes $\overset{\frown}{AC} \cong \overset{\frown}{EC}$.

18. What is the difference between "an angle inscribed in an arc" and "an angle that intercepts an arc"? Draw and label an example of each.