10.2 – ARCS, SEMICIRCLES, & CENTRAL ANGLES

In $circle\ S$, $\overline{TE}$ and $\overline{KR}$ are diameters with $m\angle TSR = 42°$. Determine whether each arc is a minor arc, a major arc, or a semicircle. Find the degree measure of each arc.

1. _____; _____	$m\ \overset{\frown}{TRE} =?$
2. _____; _____	$m\ \overset{\frown}{TK} =?$
3. _____; _____	$m\ \overset{\frown}{TRK} =?$
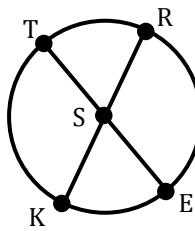
In $circle\ C$, $\overline{IL}$ is a diameter, $m\angle ICR = (3x + 5°)$, and $m\angle RCL = (x - 1°)$.

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4. _____	Find the value of 'x'.
5. _____	Find $m\angle ICR$.
6. _____	Find $m\ \overset{\frown}{ILR}$.
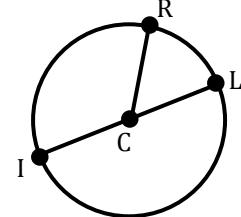
Refer to $circle\ E$ for exercises 7 – 15. If $m\angle TEG = 21°$ and $\overline{TR}$ is a diameter, determine whether each arc is a minor arc, a major arc, or a semicircle. Then, find the degree measure of each arc.

7. _____; _____	$m\ \overset{\frown}{TG}$
8. _____; _____	$m\ \overset{\frown}{ATR}$
9. _____; _____	$m\ \overset{\frown}{AR}$
10. _____; _____	$m\ \overset{\frown}{TAR}$
11. _____; _____	$m\ \overset{\frown}{AG}$
12. _____; _____	$m\ \overset{\frown}{ARG}$
13. _____; _____	$m\ \overset{\frown}{RAG}$
14. _____; _____	$m\ \overset{\frown}{TAG}$
15. _____; _____	$m\ \overset{\frown}{GR}$
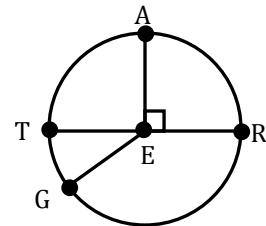
In *circle* **G,** ∠NGE ≅ ∠EGT, $m\angle AGJ = (4x)°$, $m\angle JGT = (2x + 24)°$, **and** $\overline{AT}$ **and** $\overline{JN}$ **are diameters.**
Find each of the following.

16. _____	Find the value of 'x'.
17. _____	$m\angle AGJ = ?$
18. _____	$m\angle JGT = ?$
19. _____	$m\ \overarc{NE} = ?$
20. _____	$m\ \overarc{NJT} = ?$
21. _____	$m\ \overarc{JNE} = ?$
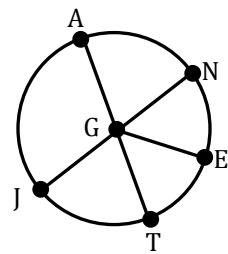
Find each of the angles measures indicated.

22. $m\angle 1 = $ _____	
23. $m\angle 1 = $ _____	
24. $m\angle 1 = $ _____ $m\angle 2 = $ _____	
25. $m\angle 1 = $ _____ $m\angle 2 = $ _____	