●rcle: set of all points __equidistant__ from a given point called the __Center__ of the circle
Example: Symbolic Form:

Center: the __point__ in which all the points in the circle are equidistant to
Example: Symbolic Form:

Radius: Distance from the __Center__ to a __point on the circle.__
Example: Symbolic Form:

Chord: A __Segment__ whose endpoints are on the circle
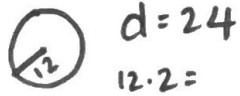Example: Symbolic Form:

Diameter: Distance across the __Circle__ through its __Center__
* also known as longest chord
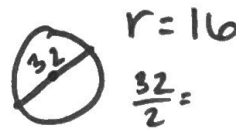
Example: Symbolic From:

●o Important Formulas:

Radius = $\frac{1}{2}$ diameter or $\frac{diameter}{2}$ Diameter = $2r$

Example: Example:

$d = 24$ $r = 16$
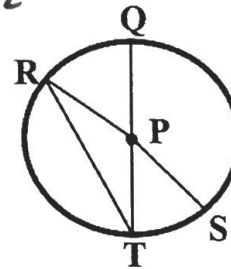
$12 \cdot 2 =$ $\frac{32}{2} =$

Examples: True or False?

1) $\overline{RT}$ is diameter (F)

2) $\overline{PS}$ is radius (T)

3) $\overline{QT}$ is chord (T)   *also diameter

Secant Line: intersects the circle at exactly __2 points__   Secant (think second = 2)
Example:

Tangent Line: a line that __intersects__ the circle exactly __one__ time
* Forms a 90° angle w/ one radius

Point of Tangency: point where tangent intersects the circle

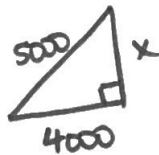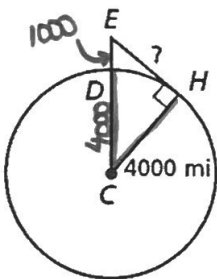Example:

Name the term that best describes the notation.

secant line
radius
diameter
chord
Tangent line

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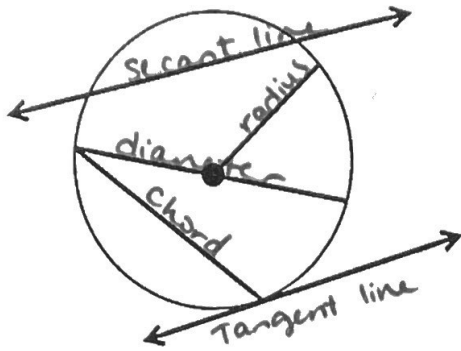
1) Find the length of each radius.
2) Identify the point of tangency.
3) Write the equation of the tangent line at this point.
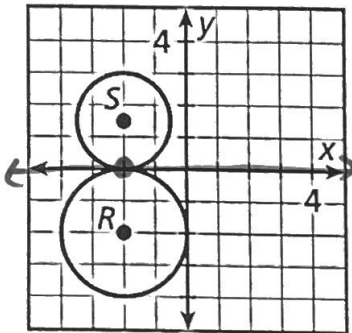
1) $\odot S = 1.5$ $\odot R = 2$

2) $(-2,0)$ (point where circles touch)

3) $y = 0$
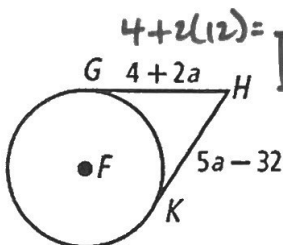

What is EH? if $DE = 1000$ mi

1000
E
?
H
D
4000 mi
C

5000
x
4000

Pythagorean Th:
$a^2 + b^2 = c^2$

$x^2 + 4000^2 = 5000^2$

$\boxed{x = 3000}$

What is HG?

$4 + 2(12) =$ $\boxed{28}$

G $4 + 2a$ H
$\bullet F$
$5a - 32$
K

* If two tangent segments meet at same exterior point, then they are $\cong$.

$4 + 2a = 5a - 32$
$\underline{-2a \quad\quad -2a}$
$4 = 3a - 32$
$\underline{+32 \quad\quad +32}$

$36 = 3a$

$a = 12$