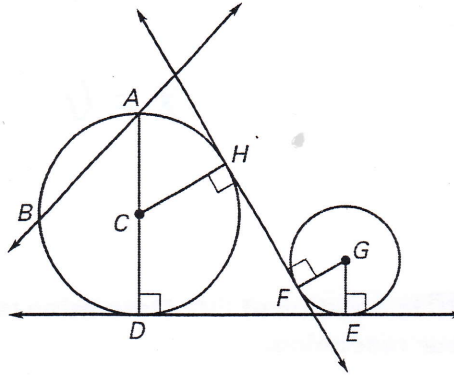Name __Key__   Date _____
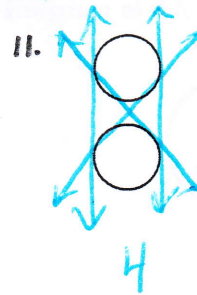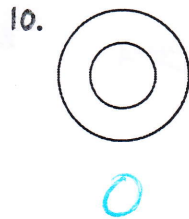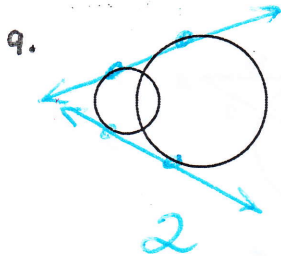
30.1 **Practice** – Properties of Tangents

Match the notation with the term that best describes it.

E   **1.** D **A.** Center

G   **2.** $\overleftrightarrow{FH}$ **B.** Chord

D   **3.** $\overline{CD}$ **C.** Diameter

B   **4.** $\overline{AB}$ **D.** Radius

A   **5.** C **E.** Point of tangency

C   **6.** $\overline{AD}$ **F.** Common external tangent

H   **7.** $\overleftrightarrow{AB}$ **G.** Common internal tangent

F   **8.** $\overrightarrow{DE}$ **H.** Secant

Tell how many common tangents the circles have and draw them.

9.   **10.**   **11.**

2   O   4

12. **Softball** On a softball field, home plate is 38 feet from the pitching circle. Home plate is about 45.3 feet from a point of tangency on the circle.
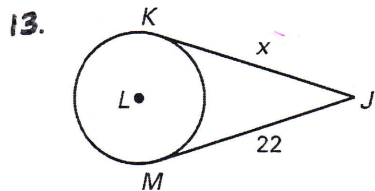

45.3 ft

38 ft
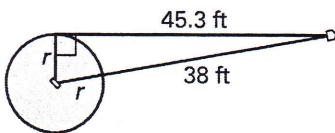
a. How far is it from home plate to a point of tangency on the other side of the pitching circle?   45.3 ft
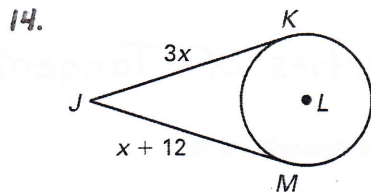
b. What is the radius of the pitching circle?

about 8 ft
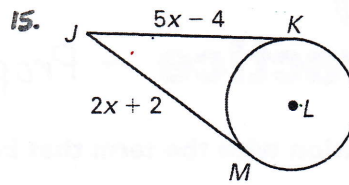
$\overline{JK}$ is tangent to $\odot L$ at K and $\overline{JM}$ is tangent to $\odot L$ at M. Find the value of x.

13.

K
x
L•
J
22
M

$x = 22$

14.

K
$3x$
J
•L
$x + 12$
M

$x = 6$

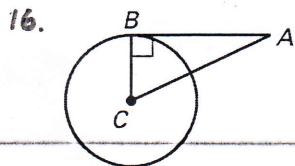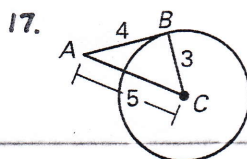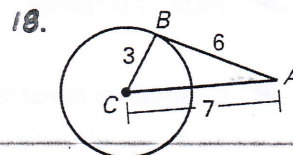**15.**

J
$5x - 4$
K
$2x + 2$
•L
M

$x = 2$

In the diagram, $\overline{BC}$ is a radius of $\odot C$. Determine whether $\overline{AB}$ is tangent to $\odot C$. **Explain** your reasoning.

16.

B
A
C

yes; $\overline{AB}$ is $\perp$ to $\overline{BC}$ (which is a radius) at B.

17.

A 4 B
3
5 C

yes;
$3^2 + 4^2 = 5^2$
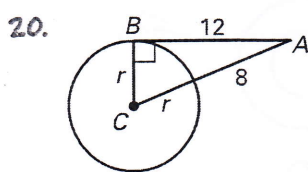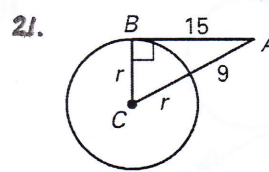so △ABC is a
right △

18.

B 6
3
C 7 A

no; $3^2 + 6^2 \neq 7^2$

In the diagram, $\overline{AB}$ is tangent to $\odot C$ at point B. Find the radius r of $\odot C$.

19.

A 4 B
2
r
r
C

$r = 3$

20.

B 12
r A
r 8
C

$r = 5$

21.

B 15
r A
r 9
C

$r = 8$