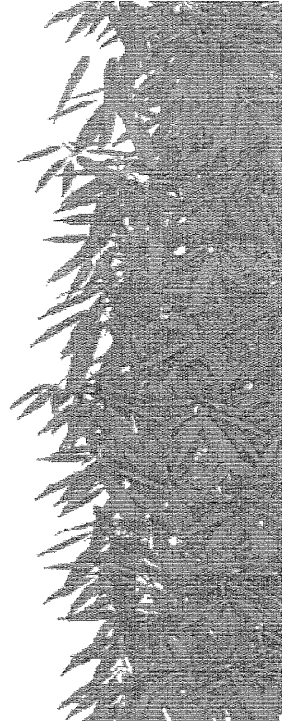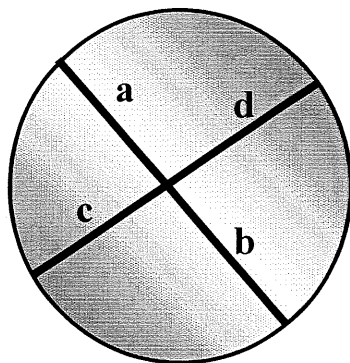1)

Analytic Geometry
Chapter 6.6

Secant and Tangent
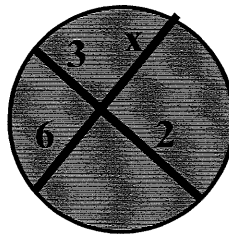## Segment Measures

2)

Type 1: Two chords intersect INSIDE the circle

$ab = cd$

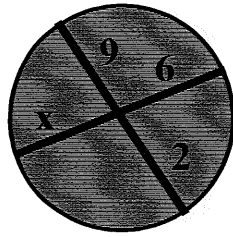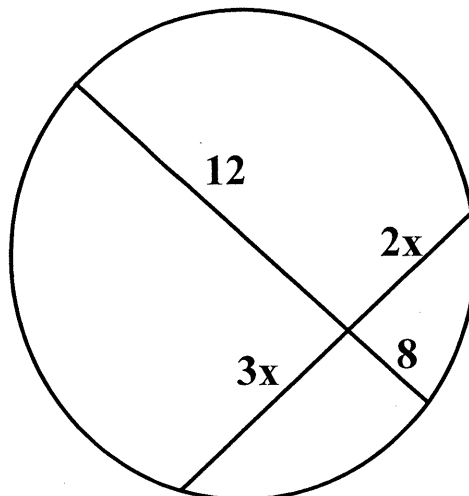part • part = part • part

3)

Example 1:

(circle with chords labeled 9, 6, x, 2)

(circle with chords labeled 3, 12, 2, x)

(circle with chords labeled 3, x, 6, 2)

4)

Example 2: Find x

(circle with chords labeled 12, 2x, 3x, 8)
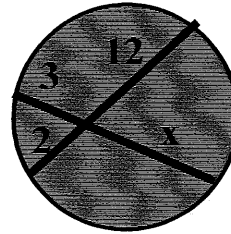
3)

Type 2: Two secants intersect OUTSIDE the circle

E ● ————————— A ● ————————— B ●

C ●

D ●
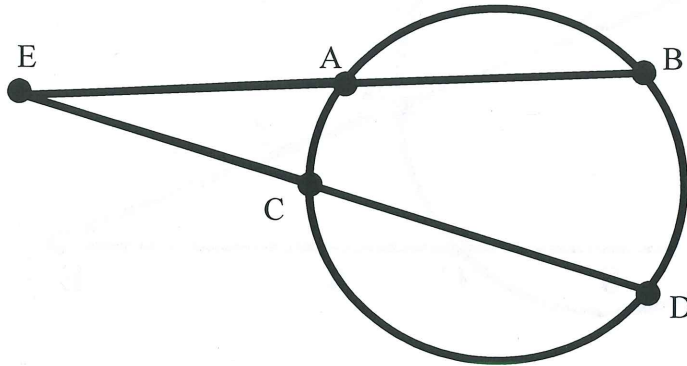
EA * EB = EC * ED
outside • whole = outside • whole

6)

Example 3:

E ● — 7 — A — 13 — B ●

● 4

C ●

X

D ●

7)

Example 4:

B

x

A

5

D   8   C   6   E
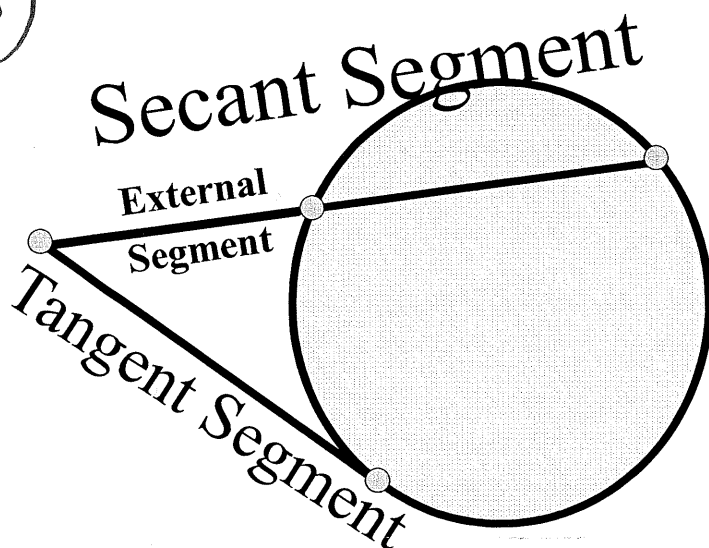
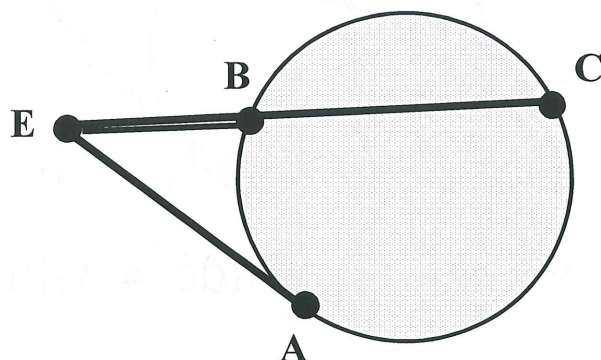8)

Secant Segment

External
Segment
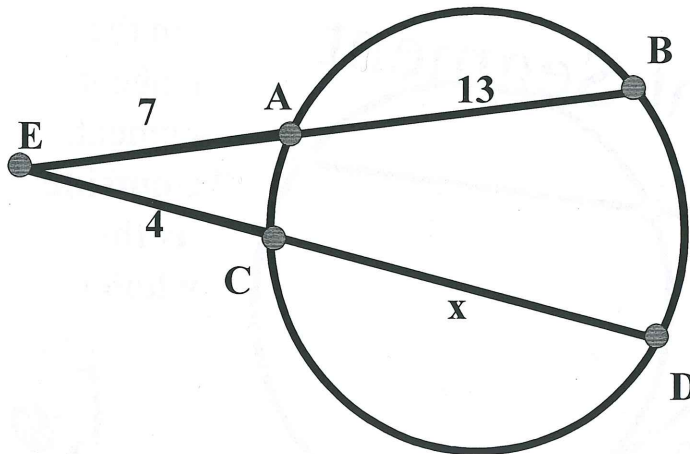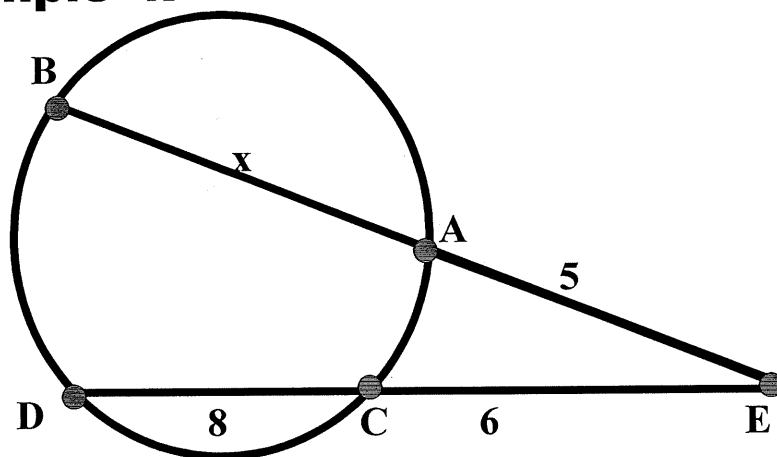
Tangent Segment

Notice that
on the
tangent
segment,
the **outside**
is the
whole!

9)

Type 2 (with a twist): Secant and Tangent
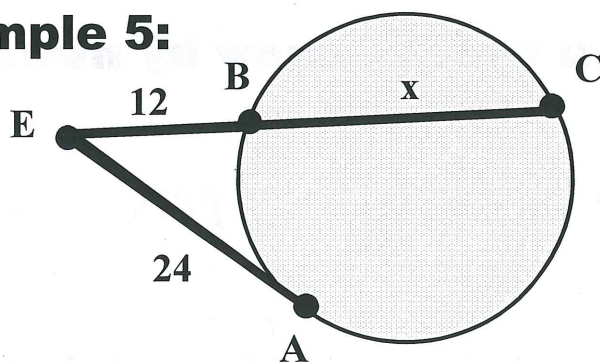

outside • whole = outside • whole

$$EA^2 = EB * EC$$
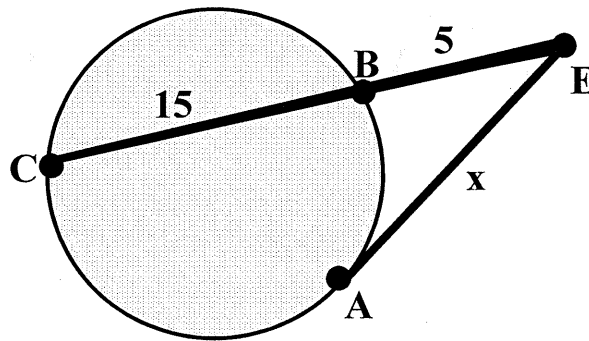
10)

Example 5:

outside • whole = outside • whole

11) **Example 6:**

$$\text{outside} \cdot \text{whole} = \text{outside} \cdot \text{whole}$$

12)

What you should know by now...

$$\text{part} \cdot \text{part} = \text{part} \cdot \text{part}$$

$$\text{outside} \cdot \text{whole} = \text{outside} \cdot \text{whole}$$