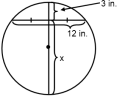


Notes: **SPECIAL SEGMENTS IN A CIRCLE**

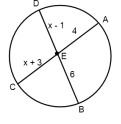
Content Objective: I will be able to find missing measurements by using special segments in circles.

If two chords intersect in a circle, then the products of the measures of the segments of the chords are **congruent**.
 (piece)(piece) = (piece)(piece)

EXAMPLE 1: Find the value of x .
 $(3)(x) = 12$
 $x = 4$



QUICK CHECK: Find the value of x .
 $(x-1)6 = 4(x+3)$
 $6x-6 = 4x+12$
 $2x = 18$
 $x = 9$



Geometry Unit -10 Properties of Circles Page 727

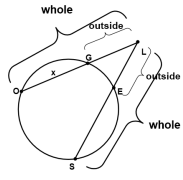
Notes: **SPECIAL SEGMENTS IN A CIRCLE**

If two secant segments are drawn to a circle from an exterior point, then the product of the measures of one secant segment and its external secant segment is equal to the product of the measures of the other secant segment and its external secant segment.

SECANT SEGMENTS: (whole segment)

EXTERNAL SECANT SEGMENTS: (Outside part)

(whole)(outside) = (whole)(outside)
 (LO)(LG) = (LS)(LE)

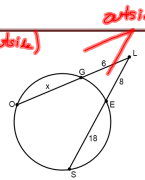


Geometry Unit -10 Properties of Circles Page 728

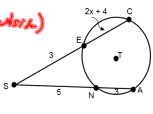
Notes: **SPECIAL SEGMENTS IN A CIRCLE**

whole(outside) = whole(outside)

$(6+x)(6) = 26(8)$
 $36+6x = 208$
 $6x = 172$
 $x = 28.7$



QUICK CHECK: Find the value of x .
 $(2x+4)(3) = 8(5)$
 $(2x+7)3 = 40$
 $6x+21 = 40$
 $6x = 19$
 $x = 3.2$

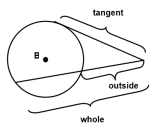


Geometry Unit -10 Properties of Circles Page 729

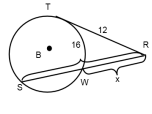
Notes: **SPECIAL SEGMENTS IN A CIRCLE**

If a tangent segment and a secant segment are drawn to a circle from an exterior point, then the square of the measure of the tangent segment is equal to the product of the measures of the secant segment and its external secant segment.

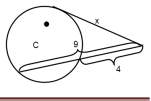
(tangent)² = (whole)(outside)



EXAMPLE 3: Find the value of x .
whole(outside) = tangent²
 $16(x) = 144$
 $x = 9$



QUICK CHECK: Find the value of x .
whole(outside) = tan²
 $(9)(6) = x^2$
 $36 = x^2$
 $x = 6$



Geometry Unit -10 Properties of Circles Page 730