

Warm Up

Solve the equation.

1. $x^2 + 4x + 3 = 0$

$(x+1)(x+3) = 0$

$x+1=0$
 $x=-1$
 $x+3=0$
 $x=-3$

2. $6x - 9 = x^2$

$0 = 1x^2 - 6x + 9$
 $0 = (x-3)(x-3)$

$x-3=0$
 $x=3$

3. $21(x-4) = (2x-7)(x+2)$

$21x - 84 = 2x^2 - 3x - 14$

$0 = 2x^2 - 24x + 70$

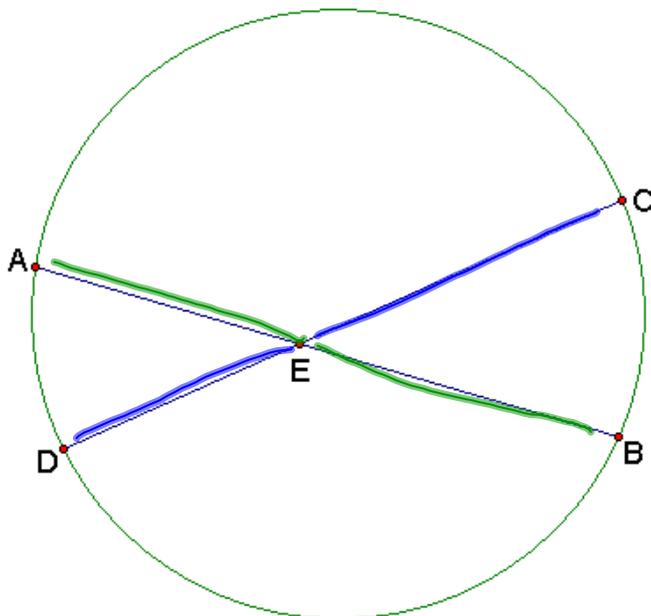
$0 = x^2 - 12x + 35$

$0 = (x-7)(x-5)$

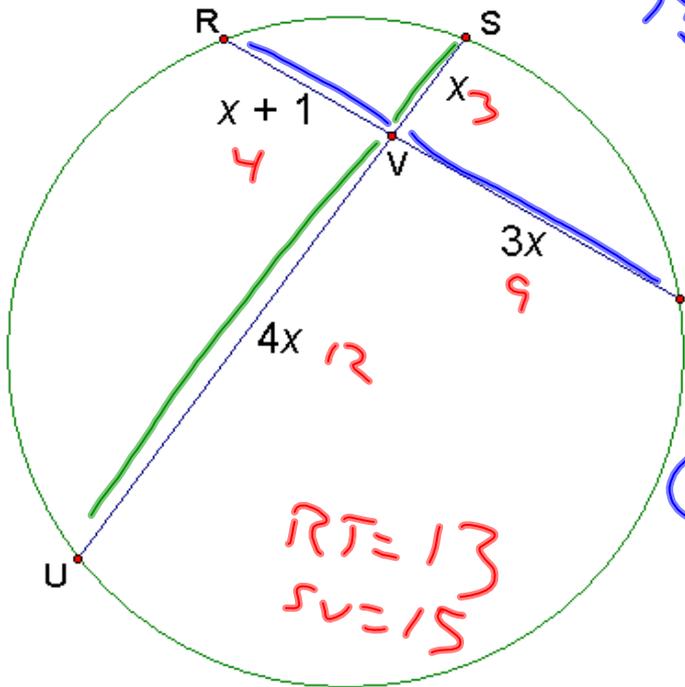
$x=7$
 $x=5$

10-6 Segment Lengths in Circles

$EA \times EB = EC \times ED$



Ex 1 Find RT and SU



$$3x(x+1) = x(4x)$$

$$3x^2 + 3x = 4x^2$$

$$0 = x^2 - 3x$$

$$0 = x(x-3)$$

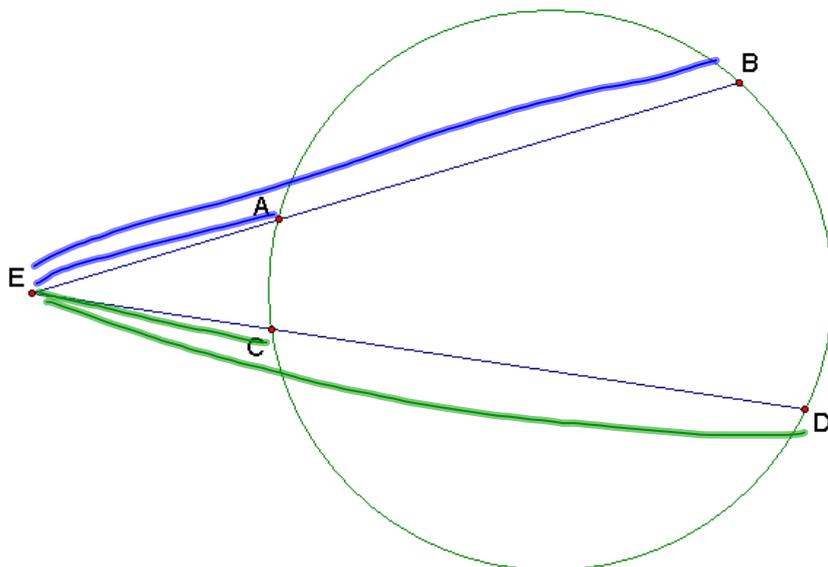
$$\cancel{x=0}$$

$$x-3=0$$

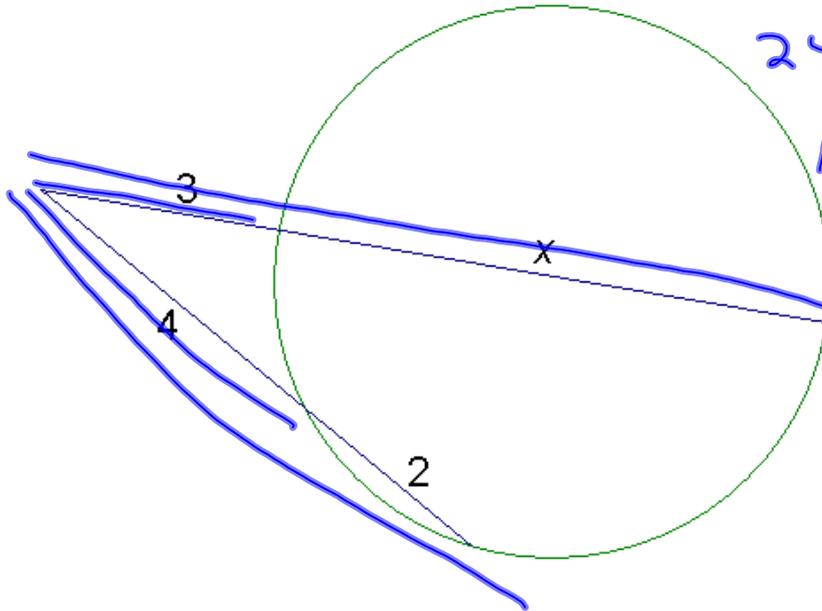
$$x=3$$

Secant segments

$$EA \times EB = EC \times ED$$



Ex 2 What is the value of x ?



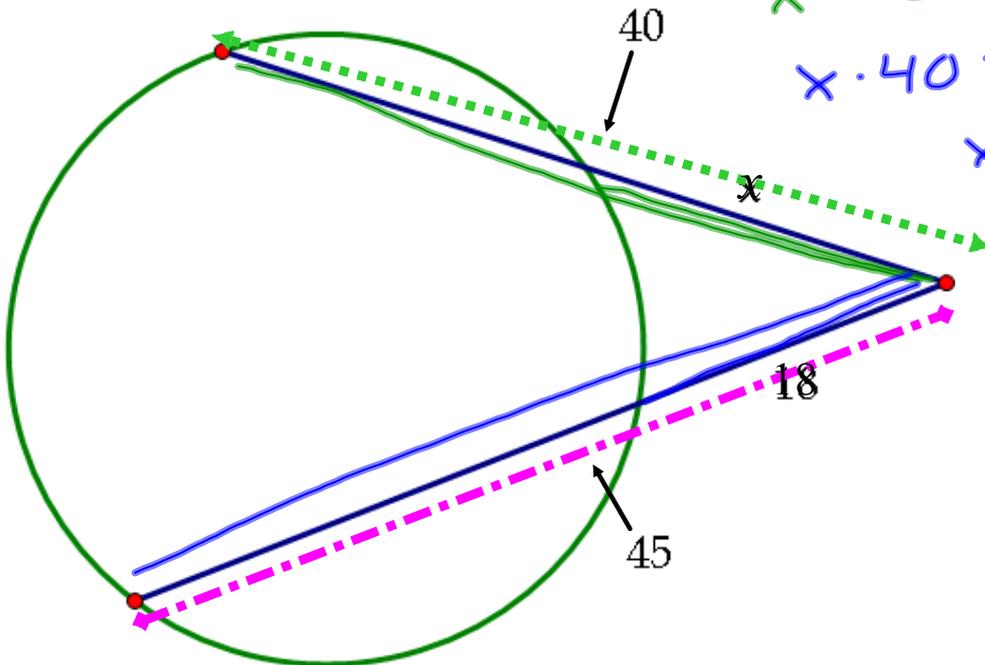
$$4 \cdot 6 = 3(3+x)$$

$$24 = 9 + 3x$$

$$15 = 3x$$

$$5 = x$$

Ex 3 What is the value of x ?



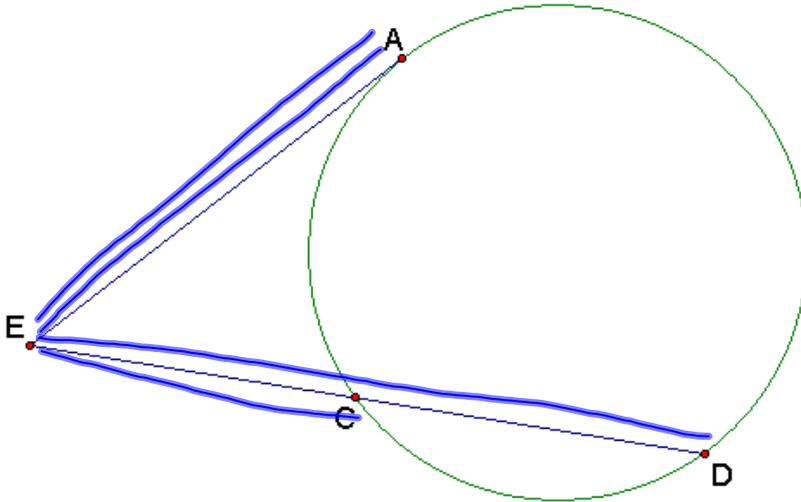
$$x \cdot 40 = 18 \cdot 45$$

$$x \cdot 40 = 810$$

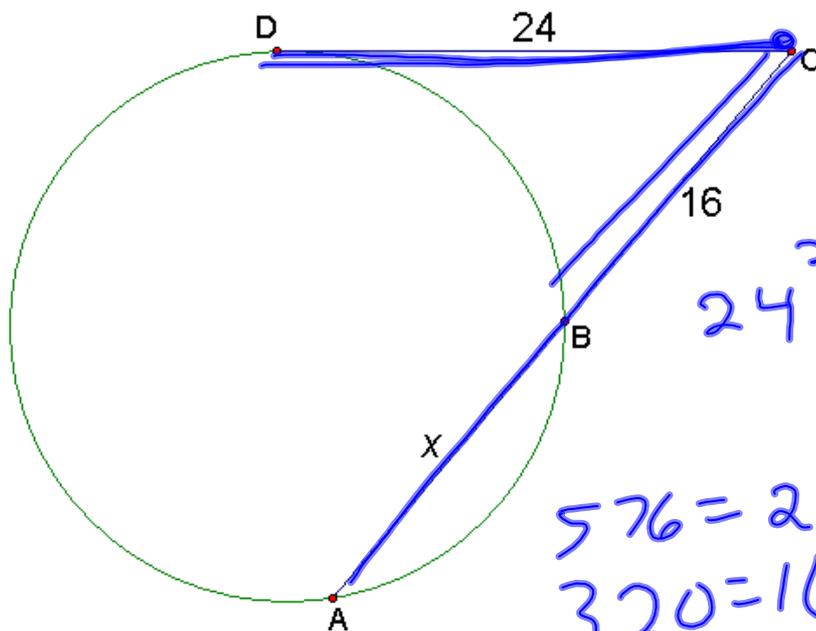
$$x = 20.25$$

Tangent and secant segments

$$EA^2 = EC \times ED$$



Ex 4 Use the figure to find AB .



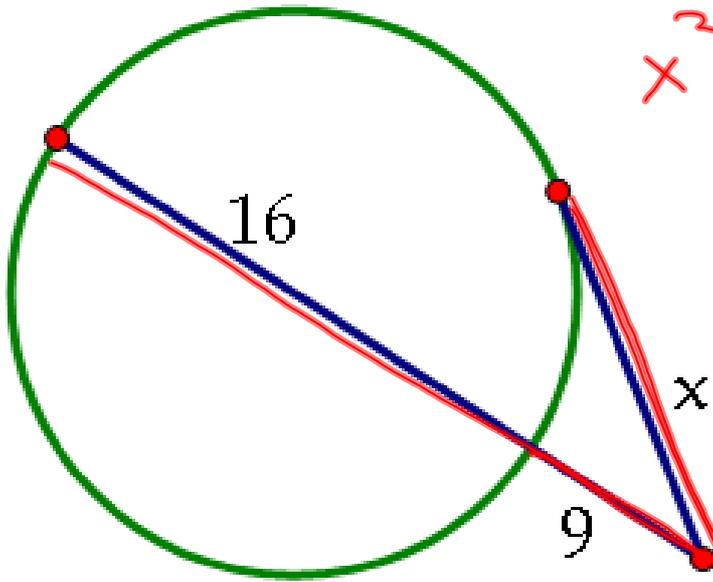
$$24^2 = 16(16+x)$$

$$576 = 256 + 16x$$

$$320 = 16x$$

$$20 = x$$

Ex 5 Use the figure to find x .



$$x^2 = 9 \cdot 25$$

$$x^2 = 225$$

$$x = 15$$

Ex 6 In the figure, $AB = 12$, $BC = 8$, $DE = 6$, and $PD = 4$, and A is a point of tangency. Find the radius of circle P .

