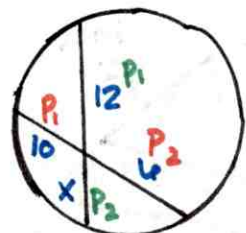
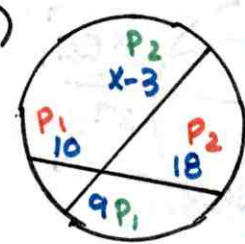
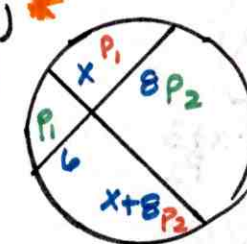


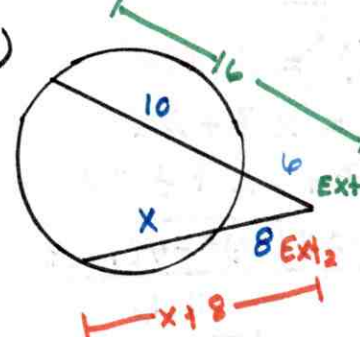
10.6

- 1) The part of the secant segment that is outside the circle is called an external segment.
- 2) Difference between a tangent and secant segment.
Tangent segment only has one endpoint on the circle. Secant segment has a chord inside a circle and an external part.

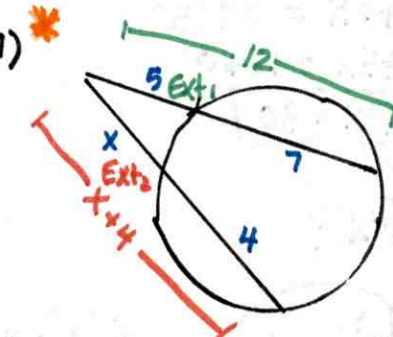
3)  $12x = 10(6)$
 $12x = 60$
 $x = 5$

4)  $9(x-3) = 10(18)$
 $9x - 27 = 180$
 $9x = 207$
 $x = 23$

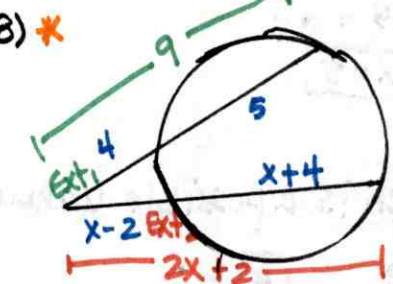
5) *  $6(8) = x(x+8)$
 $48 = x^2 + 8x$
 $x^2 + 8x - 48 = 0$
 $(x+12)(x-4) = 0$
 $x = -12, x = 4$

6)  $6(16) = 8(x+8)$

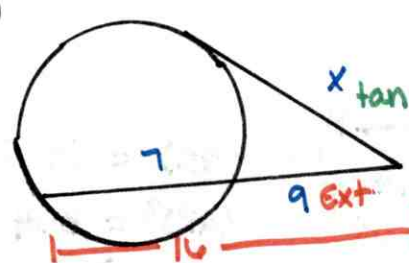
$96 = 8x + 64$
 $32 = 8x$
 $x = 4$

7) *  $5(12) = x(x+4)$

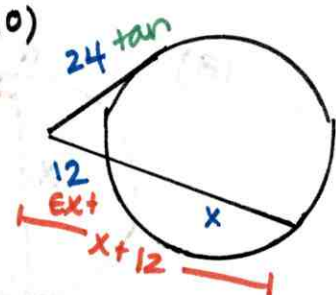
$60 = x^2 + 4x$
 $x^2 + 4x - 60 = 0$
 $(x+10)(x-6) = 0$
 $x = -10, x = 6$

8) *  $4(9) = (x-2)(2x+2)$

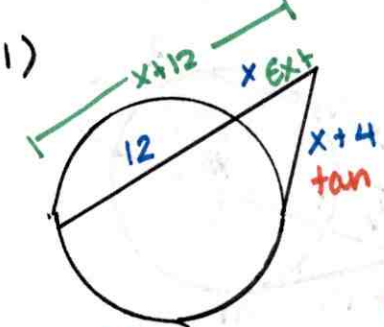
$36 = 2x^2 - 2x - 4$
 $2x^2 - 2x - 40 = 0$
 $x^2 - x - 20 = 0$
 $(x-5)(x+4) = 0$
 $x = 5, x = -4$

9)  $x^2 = 9(16)$

$x^2 = 144$
 $x = 12$

10)  $24^2 = 12(x+12)$

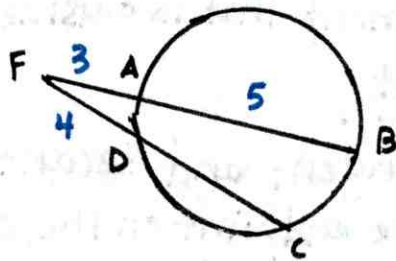
$576 = 12x + 144$
 $432 = 12x$
 $x = 36$

11)  $(x+4)^2 = x(x+12)$

$x^2 + 8x + 16 = x^2 + 12x$
 $16 = 4x$
 $x = 4$

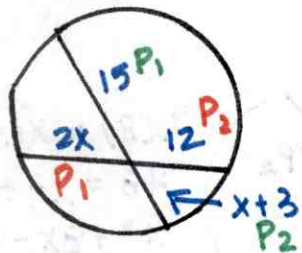
12) Describe and correct error in finding CD.

$CD \cdot DF = AB \cdot AF$
 $CD \cdot 4 = 5 \cdot 3$
 $CD \cdot 4 = 15$
 $CD = 3.75$



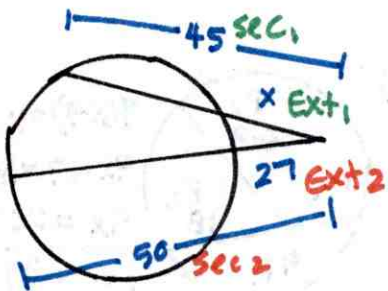
$Ext_1 (Sec_1) = Ext_2 (Sec_2)$
 $AF \cdot FB = DF \cdot FC$
 $3 \cdot 8 = 4(x+4)$
 $24 = 4x + 16$
 $8 = 4x$
 $x = 2$

13)



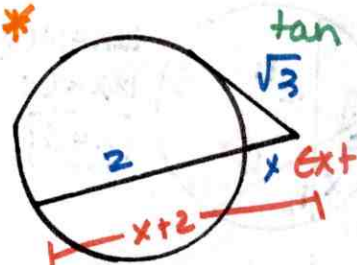
$15(x+3) = 2x(12)$
 $15x + 45 = 24x$
 $45 = 9x$
 $x = 5$

14)



$45x = 27(90)$
 $45x = 2430$
 $x = 54$

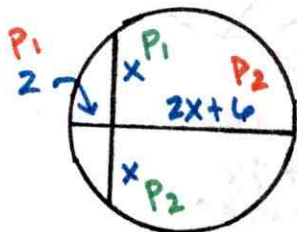
15) *



$(\sqrt{3})^2 = x(x+2)$
 $3 = x^2 + 2x$
 $x^2 + 2x - 3 = 0$
 $(x+3)(x-1) = 0$
 $x = -3, x = 1$

16) which is a possible value of x?

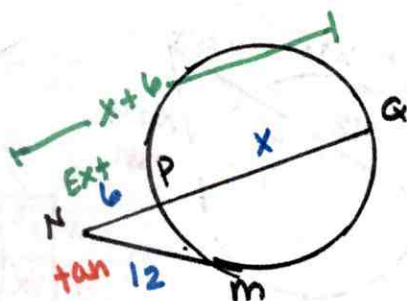
- A -2 B 4
 C 5 D 6



$x(x) = 2(2x+6)$
 $x^2 = 4x + 12$
 $6^2 = 4(6) + 12$
 $36 = 24 + 12$
 $36 = 36 \checkmark$

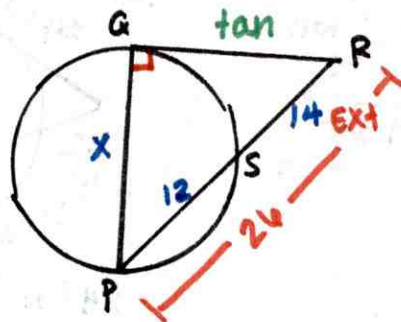
Find PQ.

17)



$12^2 = 6(x+6)$
 $144 = 6x + 36$
 $108 = 6x$
 $x = 18$

18)



$(PR)^2 = (QR)^2 + (PQ)^2$
 $26^2 = (\sqrt{364})^2 + x^2$
 $676 = 364 + x^2$
 $x^2 = 312$

$(QR)^2 = 14(26)$
 $(QR)^2 = 364$
 $QR = \sqrt{364}$
 $QR = 2\sqrt{91}$

$PQ = 2\sqrt{78} \text{ or } 17.7$