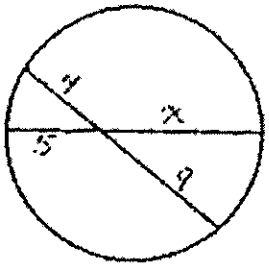
**Geometry Honors**
**Worksheet – Section 9-7**

**Name** Hey

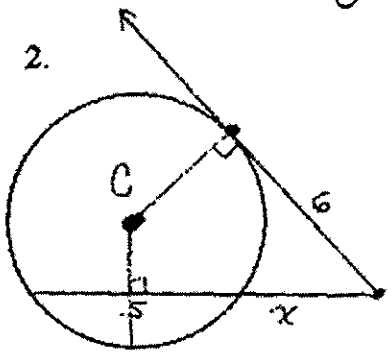
1.




x = 7.2

$.5x = 9.4$

2.




x = 4

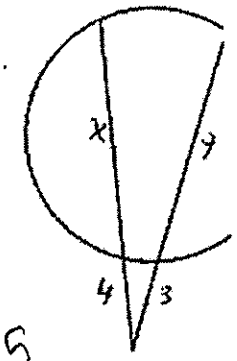
$6^2 = x \cdot (5+x)$

$36 = 5x + x^2$

$x^2 + 5x - 36 = 0$

$(x+9)(x-4) = 0$

3.




x = 5

$3 \cdot 12 = 4 \cdot (4+x)$

$36 = 4x + 16$

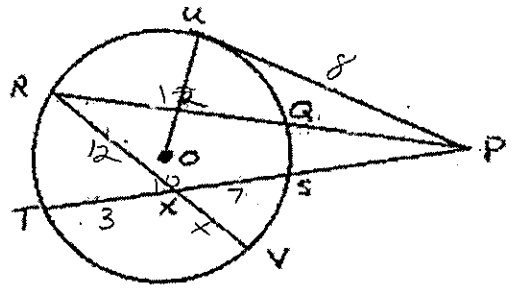
$20 = 4x$

For examples #4 – 6, see the diagram on the right. $\overline{PU}$ is tangent to circle centered at O.

4. RQ = 7; PR = 10; PT = 14; PS = 15/7

5. PU = 8; RQ = 12; RP = 16

6. RX = 12; ST = 10; SX = 7; XV = 1.75...




4) $3 \cdot 10 = x \cdot 14$

5) $8^2 = x \cdot (12+x)$

$x^2 + 12x - 64 = 0$

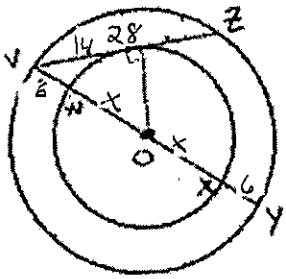
$(x+16)(x-4) = 0$

$x = 4$

6) $12x = 7 \cdot 3$

7. Two concentric circles have center O. $\overline{VZ}$ is a tangent and $\overline{VY}$ is a diameter.

XY = 6; VZ = 28; WO = 40/3




$14^2 = 6 \cdot (6+2x)$

$196 = 36 + 12x$

$160 = 12x$

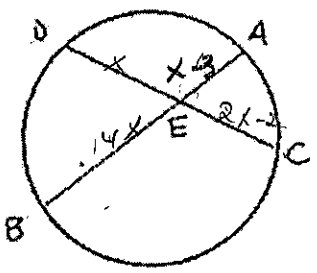
$\frac{40}{3} = x$

For examples #8-10, see the diagram on the right. $\overline{AB}$ and $\overline{CD}$ intersect at E.

8. DE = 5; EC = 8; BA = 14; BE = 4, 10

9. BE = 10; EA = 6; DC = 17; EC = 12, 5

10. AE = x – 3; EB = 4x; DE = x; CE = 2x – 2; AE = 2




8) $5 \cdot 8 = x(14-x)$

$40 = 14x - x^2$

$x^2 - 14x + 40 = 0$

$(x-10)(x-4) = 0$

$x = 4 \quad x = 10$

9) $6 \cdot 10 = x \cdot (17-x)$

$60 = 17x - x^2$

$x^2 - 17x + 60 = 0$

$(x-12)(x-5) = 0$

$x = 12 \quad x = 5$

10) $(x-3)(4x) = x(2x-2)$

$4x^2 - 12x = 2x^2 - 2x$

$2x^2 - 10x = 0$

$2x(x-5) = 0$

$x = 5$

$AE = 5 - 3 = 2$