

Day 2

Kuta Software - Infinite Geometry
Segment Lengths in Circles

Name Key
Date _____ Period _____

Solve for x . Assume that lines which appear tangent are tangent.

1) $15^2 = 9(9+x)$
 $225 = 81 + 9x$
 $144 = 9x$
 $x = 16$

2) $3(3+5) = 4(4+x)$
 $24 = 16 + 4x$
 $8 = 4x$
 $x = 2$

3) $4(4+x-3) = 5(5+x-6)$
 $4(x+1) = 5(x-1)$
 $4x+4 = 5x-5$
 $9 = x$

4) $6^2 = 4(4+x)$
 $36 = 16 + 4x$
 $20 = 4x$
 $5 = x$

5) $9(9) = 8(4x-2)$
 $81 = 32x - 16$
 $97 = 32x$
 $x = 3$

6) $5(5) = 4(x)$
 $25 = 4x$
 $x = 6.25$

7) $6^2 = x(x+5)$
 $36 = x^2 + 5x$
 $0 = x^2 + 5x - 36$
 $0 = (x+9)(x-4)$
 $x = -9$ or $x = 4$

8) $7(7+9) = 8x(6x+8x)$
 $112 = 8x(14x)$
 $112 = 112x^2$
 $1 = x^2$
 $x = 1$

Find the measure of the line segment indicated. Assume that lines which appear tangent are tangent.

9) Find UW $(12)(2x+5) = 14(2x+2)$
 $24x+60 = 28x+28$
 $32 = 4x$
 $x = 8$
 $UW = 12 + 2(8) + 5 = 33$

10) Find KM $4(4+2) = 3(3+2x+5)$
 $24 = 3(2x+8)$
 $24 = 6x+24$
 $0 = 6x$
 $x = 0$
 $KM = 3 + (2(0) + 5) = 8$

11) Find NM $(x+3)^2 = (x-3)(x+16)$
 $x^2+6x+9 = x^2+10x-3$
 $-4x = -12$
 $x = 3$
 $NM = 16 + 3 = 19$

12) Find NL $4(4+x-8) = 3(3+x-5)$
 $4(x-4) = 3(x-2)$
 $4x-16 = 3x-6$
 $x = 10$
 $NL = (10) - 8 + 3 = 5$

13) Find CE $8(7+10) = 9(9+2x-17)$
 $144 = 9(2x-8)$
 $144 = 18x - 72$
 $x = 12$
 $CE = 2(12) - 17 + 9 = 16$

14) Find CA $(14)(3+3x) = (12)(4x+1)$
 $42+42x = 48x+12$
 $30 = 6x$
 $5 = x$
 $CA = 3 + 3(5) + 14 = 32$

15) Find HG $(x+8)^2 = (12)(12+15)$
 $x^2+16x+64 = 324$
 $x^2+16x-260 = 0$
 $x = 10$
 $HG = 10 + 8 = 18$

16) Find WS $(6x)(12x) = (9)(8)$
 $72x^2 = 72$
 $x^2 = 1$
 $x = 1$
 $WS = 6(1) = 6$