See the answers to the practice assignment on PAGE 3.

1. K is the midpoint of segment JL. JK = 6x + 7 and KL = 9x – 2. Find x and JL.

2. K is the midpoint of segment JL. JK = 8x – 8 and KL = 7x – 6. Find x and JK.

3. V is between U and W. UV = 2x + 25, VW = 12, and UW = x + 25. Find x.

4. D is between C and E. CD = x + 16, DE = x + 21, and CE = 17. Find x.

5. Angles A and B are supplementary. If <A = 4x + 8 and <B = 104, find x.

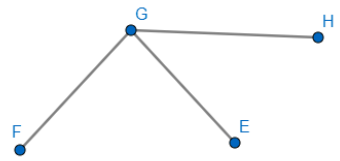
6. Angles D and M are supplementary. If <D = 2x + 24 and <M = 3x + 1, find x and m<D.

7. Angles K and W are supplementary. If <K = 3x + 17 and <W = 6x + 1, find x and m<W.

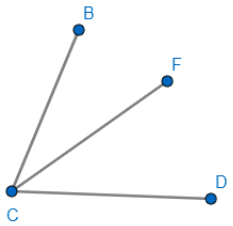
8. Angles A and O are complementary angles. If <A = 4x + 3 and <O = 2x + 9, find x.

9. Angles J and R are complementary angles. If <J = 5x + 2 and <R = 3x, find x and m<R.

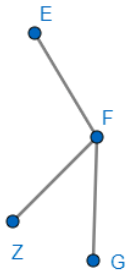
10. If m<HGF = 16x + 4, m<EGF = 110, and m<HGE = 3x + 11, find x.



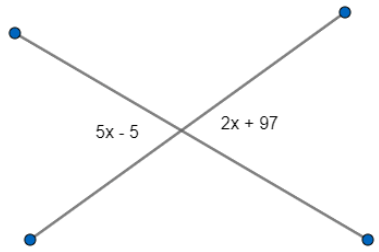
11. If m<FCD = x + 41, m<BCF = x + 78, and m<BCD = 95, find x.



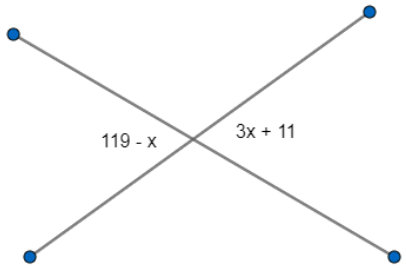
12. If m<GFZ = 38, m<ZFE = 2x + 125, and m<GFE = x + 163, find x.



13. Find x.



14. Find x.



Answer Key :

1. x = 3; JL = 50

$6(3)+7$
$18+7=25$

$JL=50$

$6x+7=9x-2$
$-6x \quad -6x$
$7=3x-2$
$+2 \quad +2$
$\frac{9}{3}=\frac{3x}{3}$

$x=3$

2. x = 2; JK = 8

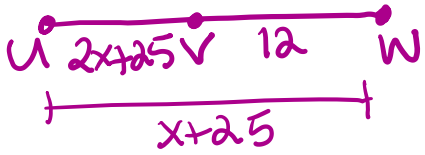
$8x-8=7x-6$
$-7x \quad -7x$
$x-8=-6$
$+8 \quad +8$

$x=2$

$JK=8x-8$
$=8(2)-8$

$JK=8$

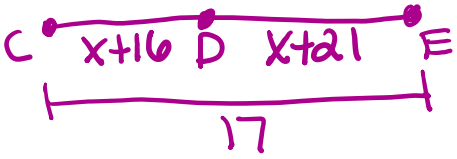
3. x = -12



$2x+25+12=x+25$
$2x+37=x+25$
$-x \quad -x$
$x+37=25$
$-37 \quad -37$

$x=-12$

4. x = -10



$x+16+x+21=17$
$2x+37=17$
$-37 \quad -37$
$\frac{2x}{2}=\frac{-20}{2}$

$x=-10$

5. x = 17

$\angle A+\angle B=180°$
$4x+8+104=180°$
$4x+112=180$
$-112 \quad -112$
$\frac{4x}{4}=\frac{68}{4}$

$x=17$

6. x = 31; m<D = 86

$\angle D+\angle M=180°$
$2x+24+3x+1=180°$
$5x+25=180$
$-25 \quad -25$
$\frac{5x}{5}=\frac{155}{5}$

$x=31$

$m\angle D=2x+24$
$=2(31)+24$

$m\angle D=86$

7. x = 18; m<W = 109

$m\angle K+m\angle W=180°$
$3x+17+6x+1=180°$
$9x+18=180°$
$-18 \quad -18$
$\frac{9x}{9}=\frac{162}{9}$

$x=18$

$m\angle W=6x+1$
$=6(18)+1$

$m\angle W=109$

8. x = 13

$m\angle A + m\angle O = 90$

$4x+3+2x+9=90$

$6x+12=90$

$-12 \quad -12$

$\frac{6x}{6} = \frac{78}{6}$

$x = 13$

9. x = 11; m<R = 33

$m\angle J + m\angle R = 90$

$5x+2+3x=90$

$8x+2=90$

$-2 \quad -2$

$\frac{8x}{8} = \frac{88}{8}$

$x = 11$

$m\angle R = 3(11)$

$m\angle R = 33$

10. x = 9

$m\angle HGF = m\angle EGF + m\angle HGE$

$16x+4 = 110+3x+11$

$16x+4 = 3x+121$

$-3x \quad -3x$

$13x+4 = 121$

$13x+4=121$

$-4 \quad -4$

$\frac{13x}{13} = \frac{117}{13}$

$x = 9$

11. x = -12

$m\angle BCD = m\angle FCD + m\angle BCF$

$95 = x+41+x+78$

$95 = 2x+119$

$-119 \quad -119$

$\frac{-24}{2} = \frac{2x}{2}$

$x = -12$

12. x = 0

$m\angle GFE = m\angle GFZ + m\angle ZFE$

$x+163 = 38+2x+125$

$x+163 = 2x+163$

$-x \quad -x$

$163 = x+163$

$-163 \quad -163$

$x = 0$

13. x = 34

$5x-5 = 2x+97$

$-2x \quad -2x$

$3x-5 = 97$

$+5 \quad +5$

$\frac{3x}{3} = \frac{102}{3}$

$x = 34$

angles are congruent (equal)

14. x = 27

$$119 - x = 3x + 11$$
$$+x \quad +x$$
$$119 = 4x + 11$$
$$-11 \quad -11$$
$$\frac{109}{4} = \frac{4x}{4}$$
$$\boxed{x = 27}$$