FIX #13 & #14

MON 03/05

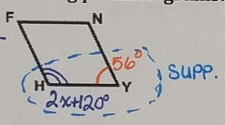
Name: Key Per: ____

Chapter 7 Review Worksheet #4

SHOW ALL WORK!!! BOX YOUR ANSWERS.

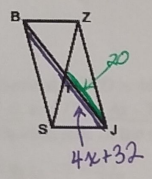
Find the value of *x* in the following parallelograms:

1. $m\angle Y = 56°$
   $m\angle H = 2x + 120°$



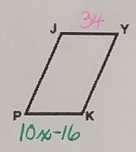
$56 + 2x + 120 = 180°$
$2x + 176 = 180$
$2x = 4$
$\boxed{x = 2}$

2. $\overline{TJ} = 20$
   $\overline{BJ} = 4x + 32$



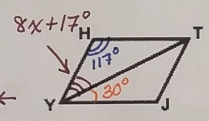
$4x + 32 = 2(20)$
$4x = 8$
$\boxed{x = 2}$

3. $\overline{JY} = 34$
   $\overline{PK} = 10x - 16$



$34 = 10x - 16$
$50 = 10x$
$\boxed{x = 5}$

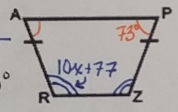
4. $m\angle TYJ = 30°$
   $m\angle THY = 117°$
   $m\angle HYT = 8x + 17°$



$30 + 117 + 8x + 17 = 180°$
$8x + 164 = 180$
$8x = 16$
$\boxed{x = 2}$

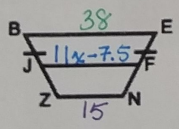
Find the value of *x* in the following trapezoids:

5. $m\angle P = 73°$
   $m\angle R = 10x + 77°$



$73 + 10x + 77 = 180°$
$10x + 150 = 180$
$10x = 30$
$\boxed{x = 3}$

6. $\overline{BE} = 38$
   $\overline{ZN} = 15$
   $\overline{JF} = 11x - 7.5$



$\frac{38 + 15}{2} = 11x - 7.5$

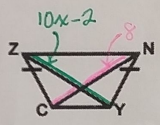
$\frac{53}{2} = 11x - 7.5$

$26.5 = 11x - 7.5$

$34 = 11x$

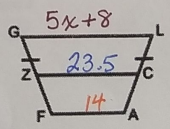
$\boxed{x \approx 3.091 \text{ OR } \frac{34}{11} \text{ OR } 3\frac{1}{11}}$

7. $\overline{CN} = 8$
   $\overline{ZY} = 10x - 2$



$8 = 10x - 2$
$10 = 10x$
$\boxed{x = 1}$

8. $\overline{FA} = 14$
   $\overline{ZC} = 23.5$
   $\overline{GL} = 5x + 8$

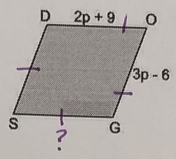


$\frac{14 + 5x + 8}{2} = 23.5$

$14 + 5x + 8 = 47$
$5x = 25$
$\boxed{x = 5}$

nswer each question. Show your work and box your answers.

9. In rhombus *DOGS*, $DO = 2p + 9$ and $OG = 3p - 6$. Find *GS*.



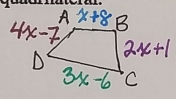
$3p-6=2p+9$

$p=15$

$2(15)+9$

$\boxed{=39}$

10. The perimeter of quadrilateral *ABCD* is 46 inches. $AB = x + 8$, $BC = 2x + 1$, $CD = 3x - 6$, and $DA = 4x - 7$. Find the length of the shortest side of the quadrilateral.



$x+8+2x+1+3x-6+4x-7=46$

$10x-4=46$

$10x=50$

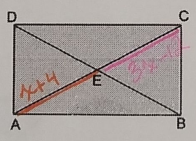
$x=5$

$(5)+8 = 13$ $\quad 2(5)+1 = 11$ $\quad 3(5)-6 = 9$ $\quad 4(5)-7 = 13$

$\uparrow$

$\boxed{\text{SHORTEST} = 9}$

11. The diagonals of rectangle *ABCD* intersect at *E*. $AE = x + 4$ and $CE = 3x - 12$. Find *BD*.



$x+4=3x-12$

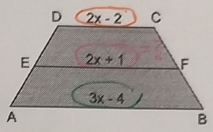
$16=2x$

$x=8$

$(8)+4+3(8)-12$

$\boxed{=24}$

12. Given trapezoid *ABCD* with median $\overline{EF}$ (labeled as shown). Find *EF*.



$\frac{2x-2+3x-4}{2} = 2x+1$

$5x-6=2(2x+1)$

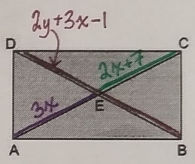
$5x-6=4x+2$

$x=8$

$2(8)+1$

$\boxed{=17}$

* 13. In rectangle *ABCD*, $AE = 3x$, $EC = 2x + 7$ and $DB = 2y + 3x - 1$. Find the values of *x* and *y*.



$AE=3x$, $EC=2x+7$, $DB=2y+3x-1$

$3x=2x+7$

$\boxed{x=7}$

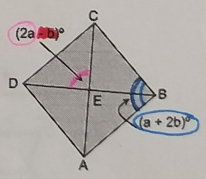
$2y+3(7)-1=3(7)+2(7)+7$

$2y+20=42$

$2y=22$

$\boxed{y=11}$

* 14. Given square *ABCD* with diagonals $\overline{AC}$, $\overline{BD}$. The $m\angle DEC = 2a$ and $m\angle ABC = a + 2b$. Find *a* and *b*.



$m\angle DEC = 2a$, $m\angle ABC = a+2b$

$2a=90°$

$\boxed{a=45}$

$(45)+2b=90°$

$2b=45$

$\boxed{b=22.5}$