FRI 03/02

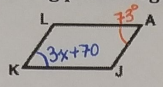
Name: Key Per: ____

**Chapter 7 Review Worksheet #3**

**SHOW ALL WORK!! BOX YOUR ANSWERS.**

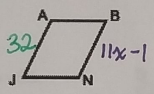
**Find the value of *x* in the following parallelograms:**

1. $m\angle A = 73°$
   $m\angle K = 3x + 70°$



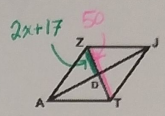

$73° = 3x + 70°$
$3 = 3x$
$\boxed{x = 1}$

2. $\overline{AJ} = 32$
   $\overline{BN} = 11x - 1$



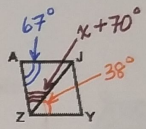

$32 = 11x - 1$
$33 = 11x$
$\boxed{x = 3}$

3. $\overline{ZT} = 50$
   $\overline{ZD} = 2x + 17$




$50 = 2(2x + 17)$
$50 = 4x + 34$
$16 = 4x$
$\boxed{x = 4}$

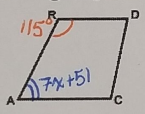
4. $m\angle JZY = 38°$
   $m\angle JAZ = 67°$
   $m\angle AZJ = x + 70°$




$38 + 67 + x + 70 = 180°$
$x + 175 = 180$
$\boxed{x = 5}$

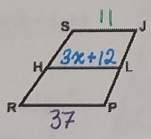
**Find the value of *x* in the following trapezoids:**

5. $m\angle R = 115°$
   $m\angle A = 7x + 51°$




$115 + 7x + 51 = 180°$
$7x + 166 = 180$
$7x = 14$
$\boxed{x = 2}$

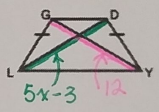
6. $\overline{SJ} = 11$
   $\overline{RP} = 37$
   $\overline{HL} = 3x + 12$




$\frac{11 + 37}{2} = 3x + 12$

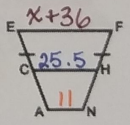
$11 + 37 = 6x + 24$
$24 = 6x$
$\boxed{x = 4}$

7. $\overline{GY} = 12$
   $\overline{LD} = 5x - 3$




$12 = 5x - 3$
$15 = 5x$
$\boxed{x = 3}$

8. $\overline{AN} = 11$
   $\overline{CH} = 25.5$
   $\overline{EF} = x + 36$

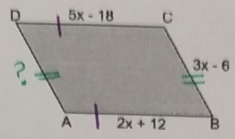



$\frac{11 + x + 36}{2} = 25.5$

$11 + x + 36 = 51$
$x + 47 = 51$
$\boxed{x = 4}$

**Answer each question. Show your work and box your answers.**

The sides of parallelogram *ABCD* are represented as shown. Find *DA*.




$5x - 18 = 2x + 12$

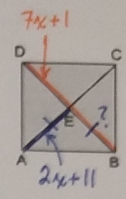
$3x = 30$

$x = 10$

$3(10) - 6$

$\boxed{= 24}$

11. Given square *ABCD* with diagonals $\overline{AC}$, $\overline{BD}$. If $DB = 7x + 1$ and $AE = 2x + 11$, find *EB*.




$7x + 1 = 2(2x + 11)$

$7x + 1 = 4x + 22$

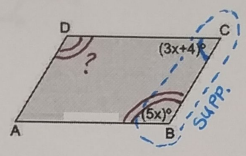
$3x = 21$

$x = 7$

$2(7) + 11$

$\boxed{= 25}$

9. Given parallelogram *ABCD* with $m\angle B = 5x$ and $m\angle C = 3x+4$, Find the number of degrees in $\angle D$.




$5x + 3x + 4 = 180°$

$8x = 176$

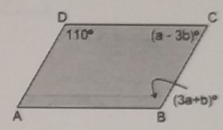
$x = 22$

$5(22)$

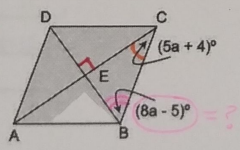
$\boxed{= 110°}$

12. Given parallelogram *ABCD*, labeled as shown. Find *a* and *b*.

SKIP




10. In rhombus *ABCD*, $m\angle ECB = 5a+4$ and $m\angle EBC = 8a - 5$. Find $m\angle EBC$.




$90 + 5a + 4 + 8a - 5 = 180°$

$13a + 89 = 180$

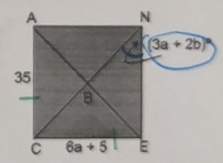
$13a = 91$

$a = 7$

$8(7) - 5$

$\boxed{= 51°}$

13. Given square *CANE* with diagonals intersecting at *B*. $m\angle CNE = 3a + 2b$, $AC = 35$, and $CE = 6a + 5$. Find the value of $a + b$.




$6a + 5 = 35$

$6a = 30$

$a = 5$

$3(5) + 2b = 45$

$2b = 30$

$b = 15$

$a + b = 5 + 15$

$\boxed{= 20}$