Honors Math 3
Unit 7 Quads Review Worksheet

Name Key

**Given parallelogram ABCD, complete each statement. SHOW ALL WORK!**

1. If $AD = \frac{x}{2}$, $BC = 2x - 12$, BC = ?

BC = 4

2. If $m\angle ABC = 2(m\angle BCD)$, $m\angle ADC$ = ?

$m\angle ADC = 120°$

3. If AD = 8, $BC = \frac{x^2}{2}$, x = ?

$x = \pm 4$

4. If $m\angle A = 4x + 11$, $m\angle B = 6x - 1$, $m\angle C$ = ?

79°

5. If $m\angle A = 31$, $m\angle C = 2x^2 - 1$, x = ?

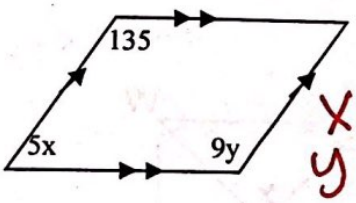
$x = \pm 4$

6. If $m\angle B = x - 40$, $m\angle D = \frac{3x}{4}$, $m\angle B$ = ?

120°

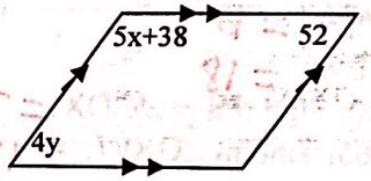
**Find x and y. Show all work.**

7.



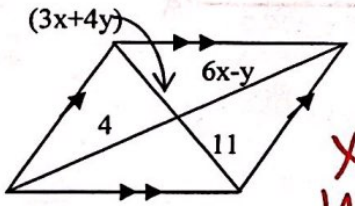

x = 9
y = 15

8.



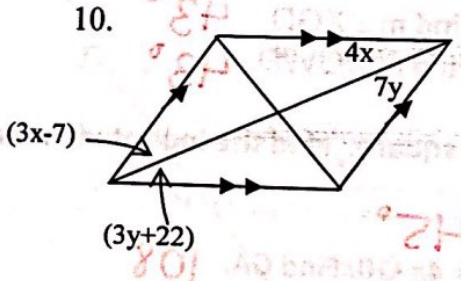

x = 18
y = 13

9.



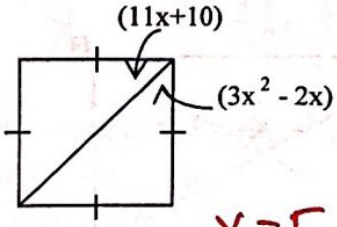

x = 1
y = 2

10.



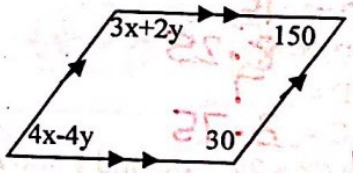

x = 7
y = 2

11.



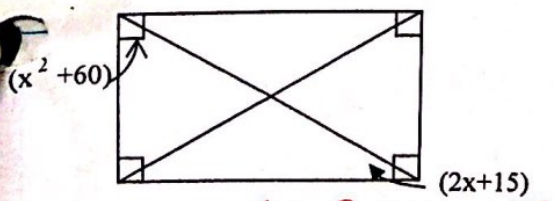

x = 5
y = -2/3

12.



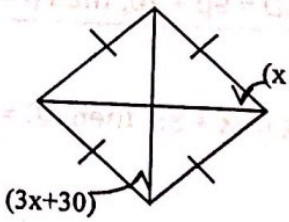

x = 21
y = -16.5

13.




x = 3 or -5

14.



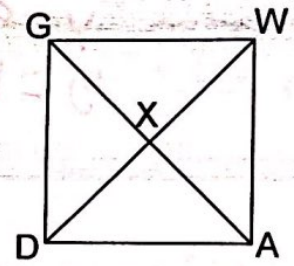

x = -8 or 5

**True or False. If false, explain.**

15. Every parallelogram is a quadrilateral. T
16. Some parallelograms are not squares. T
17. Every square is a trapezoid. F
18. Some quadrilaterals are neither trapezoids nor parallelograms. T (Kite)
19. Some rectangles have no congruent sides. F
20. No trapezoids are rectangles. T
21. A figure could be both a square and a parallelogram but not a rectangle. F
22. Some rectangles are rhombuses. F
23. Every rectangle is a parallelogram. T
24. Every rhombus is a rectangle. F
25. Every parallelogram is a rectangle. F
26. Every property of a parallelogram is also a property of a square. T
27. Every property of a square is also a property of a rectangle. T
28. The diagonals of a square bisect each other. T

**Assume that GWAD is a rectangle. Find the indicated measure.**

29. GX = 6. Find XW. = 6
30. XA = 9. Find DW. = 18
31. m∠GXD = 40. Find the m∠GDX. = 70°
32. m∠WAG = 65. Find m∠GXW. = 130°



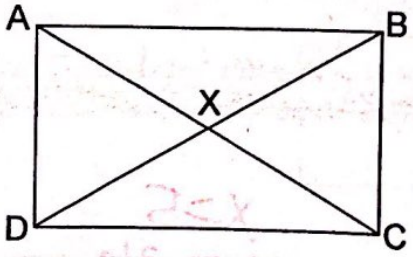

**Assume that GWAD is a rhombus. Find the indicated measure.**

33. m∠GDX = 47. Find m∠XGD. 43°
34. m∠GWA = 86. Find m∠GWD 43°

**Assume that GWAD is a square. Find the indicated measure.**

35. Find m∠XDA. 45°
36. GX = 3x + 6, XW = 4x - 10. Find GA. 108

**Given: Rectangle ABCD**



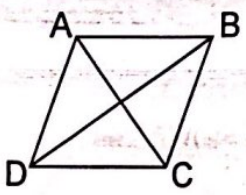

37. If AC = 15, then BD = 15
38. If AC = 16.5, then DX = 8.25
39. If AX = 3.5, then BD = 7
40. If BD = 7.5, then XC = 3.75
41. If AX = 4y + 12 and CX = 2y + 48, find y and AC. 168

42. If AC = $3p^2 + 40$ and BD = 9p + 70, then p = 5 or -2

43. If DX = 7s + 11 and CX = 3s + 83, then AC = 274

**Given: Rhombus ABCD**

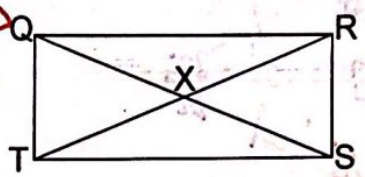
44. If m∠CAB = 30 and AD = 7, find BD. 7
45. If m∠BAD = 64, find m∠DCA. 32


**Given: Rectangle QRST**

46. If $\overline{RX} \cong \overline{QT}$, find m∠TXS. 120°
47. If m∠RQS = 30 and QS = 13, find SR. 6.5
48. If m∠QST = 45 and QT = 6.2, find QR. 6.2

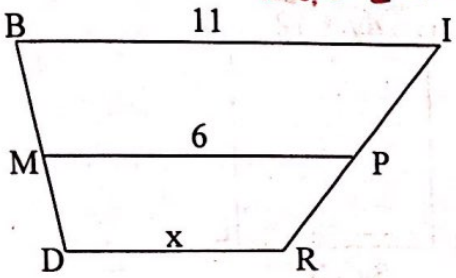
equiangular △ all ∠s 60.




**Given: Trapezoid BIRD with midpoints M and P. Find x.**

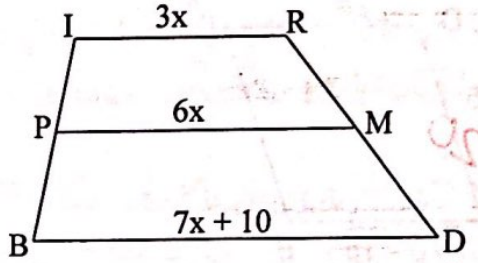
49. x = 1

$6 = \frac{1}{2}(11+x)$

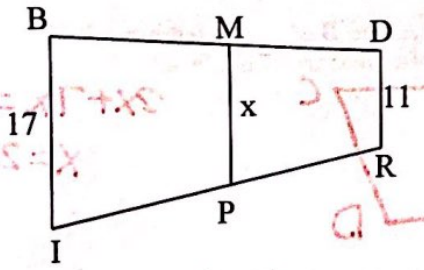



50. x = 5

$6x = \frac{1}{2}(3x+7x+10)$

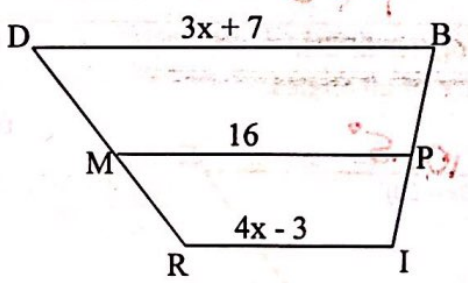



x = 14




$X = \frac{1}{2}(11+17)$

52. x = 4

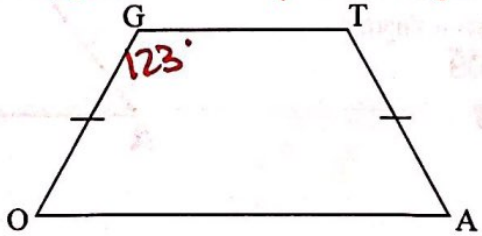



$16 = \frac{1}{2}(3x+7+4x-3)$

**Given: Trapezoid GOAT with m∠TGO = 123°.**

ISOC trap: base ∠s ≅

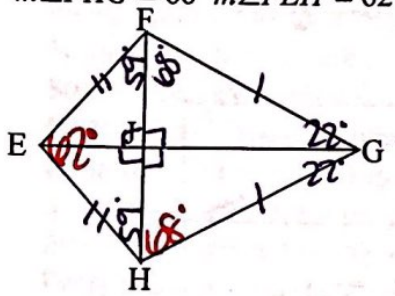
53. m∠AOG = 57°
54. m∠OAT = 57°



**Given Kite EFGH**

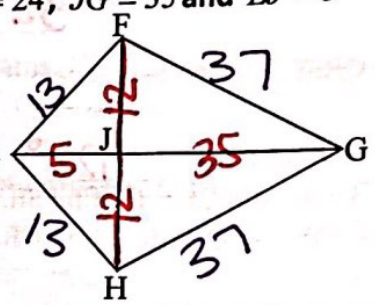
**55. Find all angle measures.**

$m\angle FHG = 68 \quad m\angle FEH = 62$



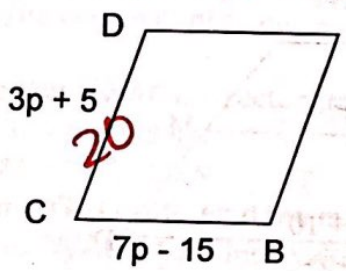

**56. Find the perimeter of the kite.** = 100

$FH = 24$, $JG = 35$ and $EJ = 5$




**Given: Rhombus ABCD and square JKLM. Find the length of each side.**

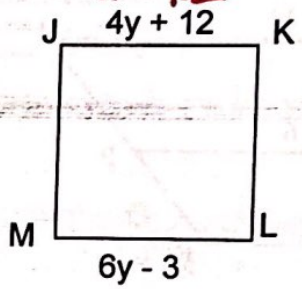
**57.**




$3p+5 = 7p-15$

$p = 5$

**58.** 42

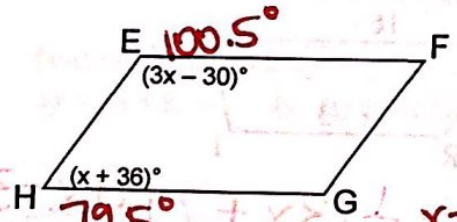



$6y-3 = 4y+12$

$y = 15/2$

**Given: Parallelogram EFGH.**
**Find the measure of all angles.**

**59.**

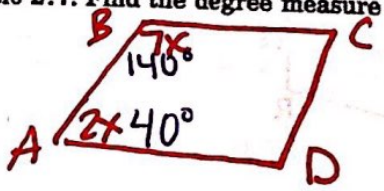



$3x-30+x+36 = 180$

$x = 43.5°$

**60.**

**The measures of angles *A* and *B* of parallelogram *ABCD* are in the ratio 2:7. Find the degree measure of angle *A*.**



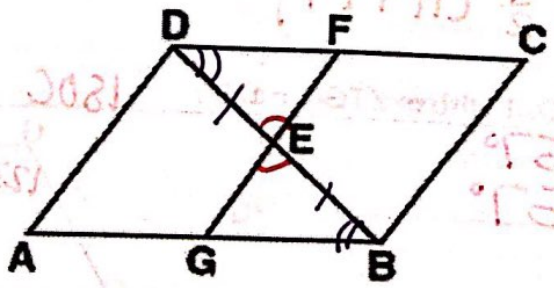

$2x+7x = 180$

$x = 20$

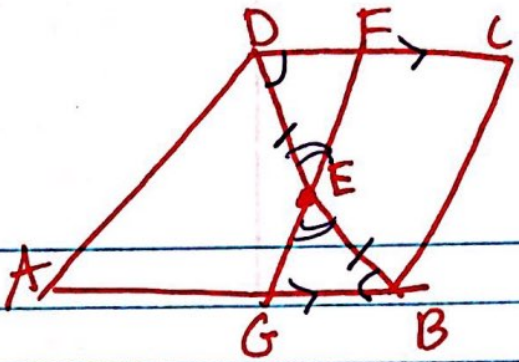
**Complete a 2 column proof.**

**61.** Given: ABCD is a parallelogram
$\overline{FG}$ bisects $\overline{DB}$

Prove: $\overline{FE} \cong \overline{EG}$




**Don't forget to also study the coordinate geometry packet!!**




01.

| Statement | reason |
|---|---|
| ① $\square ABCD$ is $\parallel$gram, $\overline{FG}$ bisects $\overline{DB}$ | ① given |
| ② $\overline{DE} \cong \overline{EB}$ | ② defn bisect |
| ③ $\overline{DC} \parallel \overline{AB}$ | ③ if parallelogram, then opp sides are parallel |
| ④ $\angle FDB \cong \angle GBD$ | ④ parallel lines cut by transversal → alt int $\angle$s are $\cong$ |
| ⑤ $\angle DEF \cong \angle BEG$ | ⑤ vertical $\angle$s $\cong$ |
| ⑥ $\triangle DEF \cong \triangle BEG$ | ⑥ ASA |
| ⑦ $\overline{FE} \cong \overline{EG}$ | ⑦ CPCTC |
| ⑧ | ⑧ |