

QUADRILATERAL PROPERTIES TASK CARD REVIEW

PARALLELOGRAMS

1. Property: Opp sides are \cong

$$7x + 2 = 9x - 28$$

$$\boxed{x = 15}$$

2. Property: Opp sides are \cong

$$4x + 29 = 10x - 19$$

$$\boxed{x = 8}$$

3. Property: Opp \angle 's are \cong

$$5x + 16 = 8x - 20$$

$$\boxed{x = 12}$$

4. Property: Consecutive \angle 's are supp

$$4x + 11 + 3x - 20 = 180$$

$$\boxed{x = 27}$$

5. Property: Opp \angle 's are \cong
consecutive \angle 's are supp

$$9x - 7 = 13x - 43$$

$$36 = 4x$$

$$9 = x$$

$$\angle S = 9(9) - 7$$

$$\angle S = 74^\circ$$

$$\angle T = 180 - 74$$

$$\boxed{\angle T = 106^\circ}$$

6. Property: Consecutive \angle 's are supp

$$5x - 11 + 11x - 33 = 180$$

$$x = 14$$

$$\angle N \cong \angle P \text{ (opp } \angle \text{'s are } \cong \text{)}$$

$$\angle N = 5(14) - 11$$

$$\angle N = 59^\circ$$

$$\boxed{\angle P = 59^\circ}$$

7. Property: Diagonals bisect each other

$$3y = 8y - 35$$

$$\boxed{y = 7}$$

$$x + 29 = 7x + 5$$

$$\boxed{x = 4}$$

8. Property: Diagonals bisect each other

$$2x + 3 = 4x - 17$$

$$x = 10$$

$$SV = 2(10) + 3$$

$$SV = 23$$

$$SU = 23(2)$$

$$\boxed{SU = 46}$$

RECTANGLES

9. Property: Opp sides are \cong

$$x + 13 = 3x - 25$$

$$\boxed{x = 19}$$

10. Property: Diagonals bisect & are \cong

$$4x - 3 = 2x + 7$$

$$x = 5$$

$$BE \cong AE$$

$$BE = 4(5) - 3 = 17$$

$$\boxed{AE = 17}$$

11. Property: Diagonals are \cong & bisect

$$4x - 15 = 9x - 80$$

$$x = 13$$

$$KN = 4(13) - 15 = 37$$

$$KN + Nm = KM$$

$$37 + 37 = KM$$

$$\boxed{KM = 74^\circ}$$

12. Property: Rectangles have 4 right angles

$$8x + 1 + 10x - 19 = 180$$

$$\boxed{x = 6}$$

13. Property: Alt. Int \angle 's are \cong

$$2x - 10 = x + 6$$

$$x = 16$$

$$\angle FEG = 2(16) - 10 = 22^\circ$$

$$\boxed{\angle DEG = 68^\circ} \text{ (Rect. have right angles)}$$

14. Property: Rectangles have right \angle 's / Triangles

$$3x - 22 + x - 4 + 90 = 180$$

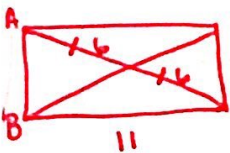
$$4x + 64 = 180$$

$$x = 29$$

$$\angle SUV = 3(29) - 22 = 65^\circ$$

$$\angle SUT = 90 - 65 = \boxed{25^\circ}$$

15. Property: Diagonals are \cong



$$a^2 + 11^2 = 12^2$$

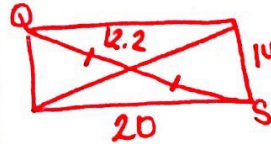
$$a^2 + 121 = 144$$

$$a^2 = 23$$

$$a = 4.8$$

$$\boxed{AB = 4.8}$$

16. Property: _____



$$14^2 + 20^2 = c^2$$

$$596 = c^2$$

$$24.4 = c$$

$$QS = 24.4$$

$$QT = \frac{1}{2}(24.4)$$

$$\boxed{QT = 12.2}$$

RHOMBI

17. Property: 4 \cong sides

$$8x + 17 = 13x + 2$$

$$\boxed{x = 3}$$

18. Property: Diagonals bisect each other

$$6x - 1 + 6x - 1 = 82$$

$$\boxed{x = 7}$$

19. Property: Diagonals are \perp

$$8x + 2 = 90$$

$$\boxed{x = 11}$$

20. Property: Diagonals are \perp / Δ Sum

$$47 + 90 + ? = 180$$

$$\boxed{\angle DEC = 43^\circ}$$

21. Property: Diagonals are \perp & bisect angles

$$\angle XWZ \cong \angle XYZ$$

$$\downarrow$$

$$56 + 56$$

$$112^\circ$$

$$\boxed{\angle XYZ = 112^\circ}$$

22. Property: Diagonals bisect \angle 's and diagonals are \perp

$$2x + 3 + 51 + 90 = 180$$

$$\boxed{x = 18}$$

23. Property: Diagonals are \perp / Pyth. Thm

$$8^2 + 13^2 = c^2$$

$$233 = c^2$$

$$15.3 = c$$

$$\boxed{WT = 15.3 \text{ ft}}$$

24. Property: Diagonals bisect / \perp

$$P = 72$$

$$\frac{72}{4} = 18$$

$$a^2 + 16^2 = 18^2$$

$$a^2 = 68$$

$$a = 8.2$$

$$\boxed{KN = 8.2 \text{ in}}$$

SQUARES

25. Property: 4 congruent sides

$P = 92$

$\frac{92}{4} = 23$ each side

$9x + 5 = 23$

$x = 2$

26. Property: Diagonals bisect / \cong

$wy = 9 + 9$

$wy = 18$ in

27. Property: Diagonals bisect / \cong

$QS = PR$

$7x - 3 = x + 11 + x + 11$

$x = 5$

$PR = 11x + 11$

$PR = 32$

28. Property: Diagonals are \cong

$4x + 1 = 8x - 51$

$x = 13$

29. Property: Diagonals are \cong & bisect

$7x + 5 = 11x - 27$

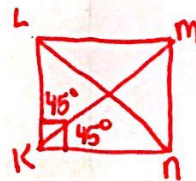
$x = 8$

$SW = 7(8) + 5$

$SW = 61$

30. Property: Diagonals bisect \angle 's

$\angle MKN = 45^\circ$

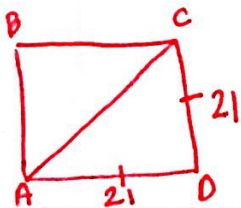


31. Property: 4 \cong sides / Pyth Thm

$21^2 + 21^2 = c^2$

$c = 29.7$

$AC = 29.7$ m



32. Property: 4 congruent sides, diagonals are \cong

$P = 64$

$\frac{64}{4} = 16$ (each side)

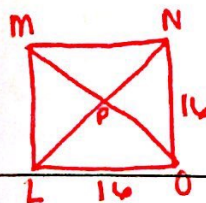
$16^2 + 16^2 = c^2$

$c = 22.6$

$LN = 22.6$, so

$PN = \frac{1}{2}(22.6)$

$PN = 11.3$ yd



TRAPEZIODS

33. Property: Legs are \cong

$$5x - 4 = 12x - 67$$

$$\boxed{x = 9}$$

34. Property: Diagonals are \cong

$$3x + 25 = 7x - 35$$

$$\boxed{x = 15}$$

35. Property: Base \angle 's are \cong

$$\boxed{\angle X = 124^\circ}$$

36. Property: Base \angle 's are \cong / consecutive \angle 's are supp

$$180 - 139 = 41$$

$$\boxed{\angle E = 41^\circ}$$

37. Property: Consecutive \angle 's are supp

$$5x - 12 + 3x = 180$$

$$x = 24$$

$$\angle J \cong \angle m$$

$$\angle J = 3(24)$$

$$\angle J = 72^\circ, \text{ so } \boxed{\angle m = 72^\circ}$$

38. Property: Midsegment Thm

$$EF = \frac{1}{2}(BC + AD)$$

$$EF = \frac{1}{2}(23 + 35)$$

$$\boxed{EF = 29 \text{ cm}}$$

39. Property: Midsegment Thm

$$TU = \frac{1}{2}(QR + PS)$$

$$14 = \frac{1}{2}(x + 18)$$

$$14 = \frac{1}{2}x + 9$$

$$x = 10$$

$$\boxed{QR = 10 \text{ ft}}$$

40. Property: Midsegment Thm

$$NO = \frac{1}{2}(KL + JM)$$

$$30 = \frac{1}{2}(\underline{2x+1} + \underline{8x-11})$$

$$30 = 5x - 5$$

$$\boxed{x = 7}$$

KITES

41. Property: Opp \angle 's are congruent where non congruent sides meet

$$360 - 89 - 41 = 230$$

$$\frac{230}{2} = 115$$

$$\angle C = 115^\circ$$

42. Property: _____

$$7x + 2 = 10x - 31$$

$$x = 11$$

$$\angle P = 7(11) + 2 \quad \angle Q = 360 - 79 - 79 - 124$$

$$\angle P = 79$$

$$\angle O = 78^\circ$$

43. Property: Diagonals are \perp , longer diagonal bisects its angles

$$180 - 90 - 72 = 18^\circ$$

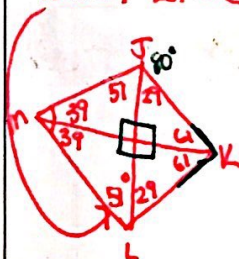
$$\angle EFG = 36^\circ$$

44. Property: Diagonals are \perp / Δ sum

$$5x + 9 + 12x - 21 + 90 = 180$$

$$x = 6$$

$$12(6) - 21 = 51^\circ$$



$$\angle JKL = 122^\circ$$

45. Property: Diagonals are \perp , shorter diagonal is bisected

$$21^2 + b^2 = 24^2$$

$$b^2 = 135$$

$$b = 11.6$$

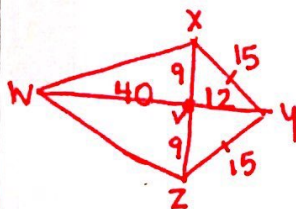
$$\text{SO } TV = 11.6 + 11.6$$

$$TV = 23.2$$

46. Property: Consecutive sides are \cong

$$23 - 2x = 7x - 13$$

$$x = 4$$



$$WY = 52$$

$$9^2 + b^2 = 15^2$$

$$b = 12$$

$$40^2 + 9^2 = c^2$$

$$c = 41$$

$$WX = 41$$