Name __Key__   Date _____ Pd ___

Chapter 7 Quadrilaterals Test Review CYU

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Properties of all quadrilaterals		1	10, 12
Sometimes, Always, Never			2
Applying properties of the rhombus		3, 16	
Applying properties of the rectangle	6	4	
Applying properties of the isosceles trapezoid		5, 8	
Applying properties of the trapezoid		7, 9	
Applying properties of the parallelogram		11	
Applying properties of the kite		13, 14	
Applying properties of the square		15	
Review of solving quadratics from Algebra 1			17

Remember the test study guide list by question in on the back of the vocabulary list. ALWAYS draw a diagram if one is not provided. Do not forget appropriate units and notation!

1. Place an X in each box in which the property is TRUE.

	Both pairs of opposite angles are congruent	Both pairs of opposite sides are congruent	At least two opposite sides are congruent	Diagonals are perpendicular	Diagonals bisect each other	All sides are congruent	Diagonals are congruent	Diagonals bisect vertex angles	Has at least two congruent sides
Parallelogram	✓	✓	✓		✓				✓
Rhombus	✓	✓	✓	✓	✓	✓		✓	✓
Rectangle	✓	✓	✓		✓		✓		✓
Square	✓	✓	✓	✓	✓	✓	✓	✓	✓
Kite				✓					✓
Trapezoid									
Isosceles Trapezoid			✓				✓		✓

2. Answer the following with (A)lways, (S)ometimes, or (N)ever true.

a. __N__ The opposite sides of a kite are congruent.

b. __A__ The diagonals of a parallelogram bisect each other.

c. __S__ A rectangle is a square.

d. __S__ Each diagonal of a rectangle bisects the angles of the rectangle.

e. __A__ A parallelogram with perpendicular diagonals is a rhombus.

3. In rhombus ABCD, find the m∠ABC and m∠BCD if the m∠DCA = (2n − 16)° and the m∠BDA = (4n − 2)°.

$n = 18$

$m∠ABC = 140°$

$m∠DCB = 40°$

4. A rectangle has a diagonal of 13 cm. The width of the rectangle is 7 cm less than its length. Find the dimensions of the rectangle. HINT: draw and label the rectangle!

$X = 12, -5$

12cm x 5cm

5. An isosceles trapezoid has legs of length $6\sqrt{2}$ and base angles that measure 45°. If the shorter base of the trapezoid measures 10 cm, find the length of the longer base. HINT: draw and label!

22 cm

6. Given that WEST is a rectangle with m∠WTV = 68°, SV = 8, and TW = 6. LABEL!!!

   a. m∠TWV = __68°__

   b. m∠VEW = __22°__

   c. m∠SVE = __44°__

   d. m∠TSV = __22°__

   e. VE = __8__

   f. WS = __16__

   g. EW = __2√55__
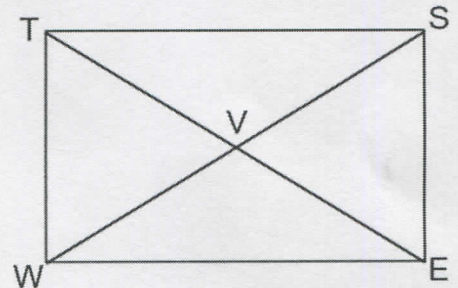
7. Trapezoid MNST with bases $\overline{MN}$ and $\overline{ST}$, m∠M = (4x + 5)°, m∠N = (6x − 7)°, m∠S = (8x − 9)°, m∠T = __119__.

$X = 14$

8. Isosceles Trapezoid KENO with bases $\overline{KE}$ and $\overline{NO}$, m∠K = (9x − 15)°, m∠E = (3x + 27)°, m∠O = __132°__.

$X = 7$

9. Trapezoid LUCK with bases $\overline{LU}$ and $\overline{KC}$, m∠K = 90°, m∠U = 135°, LK = 18 in, LU 47 in, KC = __65__.

10. In quadrilateral ABCD, m∠CBD = 62°, m∠BCA = 28°, m∠CDB = 62°, m∠BDA = 62°, and m∠DAC = 28°. Based on these measures, what kind of quadrilateral is ABCD? Be as specific as you can be! Go to the lowest possible polygon on the tree diagram as possible to be specific!

   Rhombus

11. In parallelogram WXYZ, diagonals WY = XZ. If WX = 2x, XY = 13 − y, YZ = y + 7, and WZ = 3x, give the most specific name **and** find the perimeter of the quadrilateral.

   P = 40
   Rectangle

12. The coordinates of quadrilateral PQRS are given. Determine what kind of parallelogram is formed by the coordinates. You **must** show enough algebra to justify your answer and be as specific as possible.
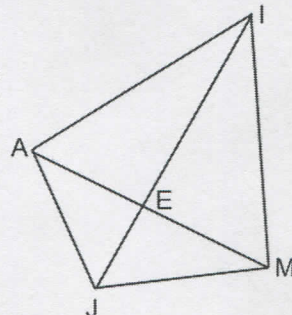   a. P(1, 3); Q(4, 1); R(1, -1); S(-2, 1)   b. P(3, 3); Q(5, -1); R(1, -3); S(-1, 1)

   Rhombus   Square

13. Kite JAIM with JA = JM, m∠AJM = 120°, m∠JMI = 103°, AM = 46 m, EI = 52 m. LABEL!!

   m∠JME = __30__°   m∠AIM = __34__°
   IM = $\sqrt{3233}$ ≈ 56.859

14. Kite KYRA with YK = YR, KR = 36 cm, HA = 12 cm, m∠KYR = 84°, YA = 20 cm, m∠YRA = 88°.

m∠YRH = **48°**   m∠KAR = **100°**

AR = **$\sqrt{468}$**   YR = **$\sqrt{388}$**

★ **$2\sqrt{117}$**   ★ **$2\sqrt{97}$**
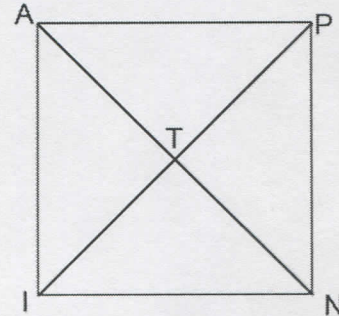
≈ **21.633**   ≈ **19.698**
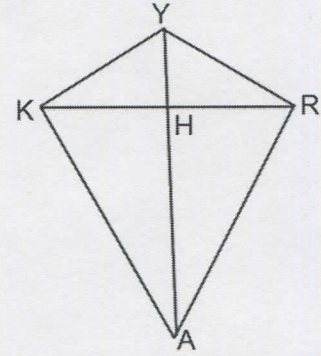
15. Given that PAIN is a **square**, answer the following.
   If PI = 24 u, then IN = **$12\sqrt{2}$**
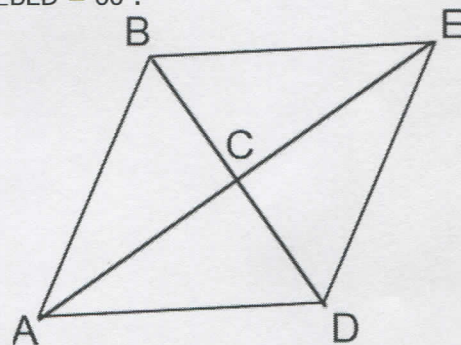
   If AI = 18 u, then TN = **$9\sqrt{2}$**.

   m∠API = **45°**

16. Given that ABED is a **rhombus** with AE = 24 mm and m∠BED = 60°.

m∠BCE = **90°**   m∠ABC = **60°**

m∠CED = **30°**   m∠ABE = **120°**

17. Solve using any method: *(factoring, quadratic formula, completing the square, etc.)*
   a. $2x^2 - 5x - 12 = 0$ b. $4x^2 - 9x + 2 = 0$

   $x = -\dfrac{3}{2}, 4$ **$x = \dfrac{1}{4}, 2$**