Geom 1-2 (E)

Name: KEY

Chapter 7 Review

Period: ____

15

1.) Given a pentadecagon, find

a.) the sum of the interior angles; $180(15-2) = 2340$

b.) the sum of the exterior angles; 360

c.) the measure of each interior angle if the polygon is regular. $\frac{360}{15} = 24°$ (EXT) $180 - 24 = 156°$

2.) If one exterior is chosen, which regular polygon has the larger exterior angle, a pentagon or a heptagon? How much larger is the angle?

PENTA = $\frac{360}{5} = 72°$ LARGER $72 - 51.4 = 20.6$ $\left(20\frac{4}{7}\right)$

HEPTA = $\frac{360}{7} = 51.4°$

3.) A [redacted]decagon has 3 angles with measures of $54°$, and 2 other angles with measures of $125°$. Find the measure of any one of the remaining angles if they are all congruent to each other.

10 SIDES

$S = 180(10-2)$

$S = 1440$

$3 \cdot 54 = 162$

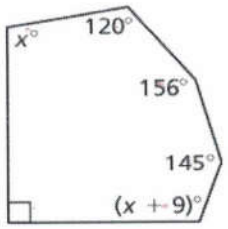
$2 \cdot 125 = 250$

412

$1440 - 412 = 1028$

$1028/5 = 205.6°$

4.) Find the value of x in the diagram below.



HEXAGON

$S = 180(6-2)$

$S = 720°$

$x + 120 + 156 + 145 + (x+9) + 90 = 720$

$2x + 520 = 720$

$2x = 200$

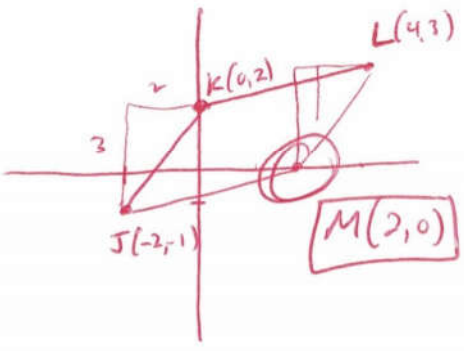
$x = 100$

IN ORDER!!

5.) Three vertices of $\square JKLM$ are $J(-2, -1)$, $K(0, 2)$, and $L(4, 3)$.

a. Find the coordinates of vertex M.

b. Find the coordinates of the intersection of the diagonals of $\square JKLM$.



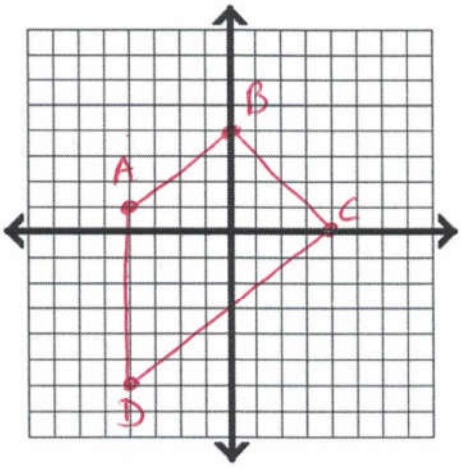
$KM = \left(\frac{0+2}{2}, \frac{2+0}{2}\right) = (1, 1)$

$JL = \left(\frac{4+(-2)}{2}, \frac{3+(-1)}{2}\right) = (1, 1)$

(1, 1)

Find the most descriptive name for each quadrilateral below. You must show your work and explain!

6.) Quadrilateral ABCD with vertices $A(-4,1)$ $B(0,4)$ $C(4,0)$ $D(-4,-6)$.



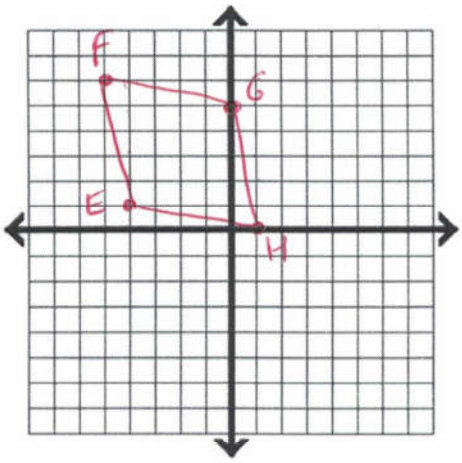
SLOPES: $\overline{AB} = \frac{3}{4}$ $\overline{CD} = \frac{3}{4}$ $\overline{BC} = -1$ $\overline{DA}$ = NO SLOPE) TRAPEZOID

$\overline{AD} = 7$

$\overline{BC} = \sqrt{4^2+4^2} = \sqrt{32}$) NOT $\cong$, NOT ISOS.

TRAPEZOID

7.) Quadrilateral EFGH with vertices $E(-4,1)$ $F(-5,6)$ $G(0,5)$ $H(1,0)$.



SLOPES: SIDES: $\overline{EF} = \frac{-5}{1}$ $\overline{GH} = \frac{-5}{1}$ $\overline{FG} = -\frac{1}{5}$ $\overline{HE} = -\frac{1}{5}$) ALL SIDES

DIAGONALS: $\overline{FH} = -1$ $\overline{EG} = 1$

$D = \sqrt{1^2+5^2} = \sqrt{26}$

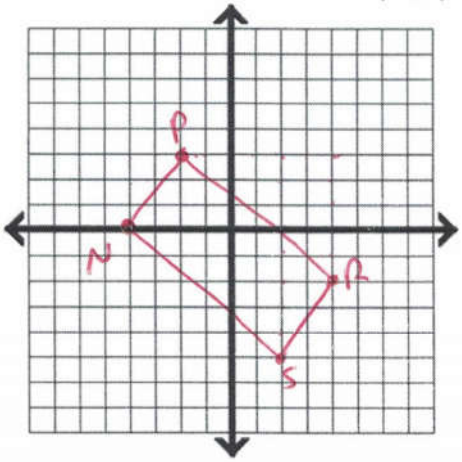
OPP SIDES $\parallel$ → ▱

CONSEC. SIDES NOT $\perp$ → NOT RECT/SQUARE

DIAGS $\perp$ → RHOMBUS

RHOMBUS

8.) Quadrilateral NPRS with vertices $N(-4,0)$ $P(-2,3)$ $R(4,-2)$ $S(2,-5)$.



SLOPES: SIDES: $\overline{NP} = \frac{3}{2}$ $\overline{RS} = \frac{3}{2}$ $\overline{PR} = -\frac{5}{6}$ $\overline{SN} = -\frac{5}{6}$

DIAGONALS: $\overline{PS} = -\frac{2}{1}$ $\overline{NR} = -\frac{1}{4}$

PARALLELOGRAM

OPP SIDES $\parallel$ → ▱

CONSEC SIDES NOT $\perp$ → NOT RECT/SQUARE

DIAGS NOT $\perp$ → NOT RHOMBUS