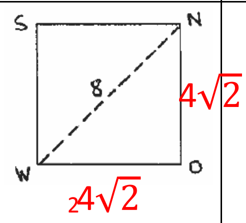
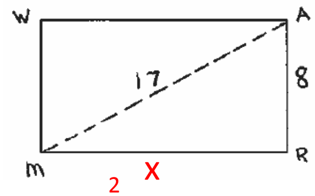
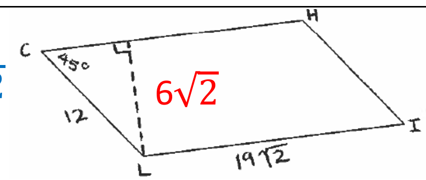
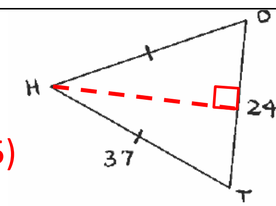
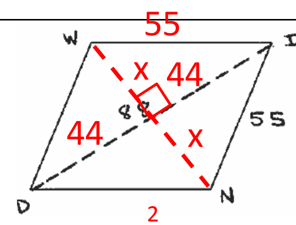
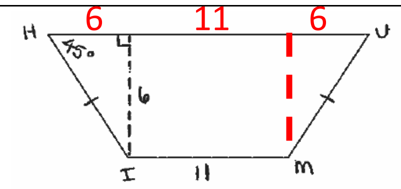
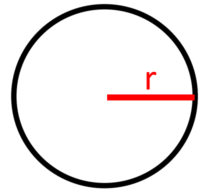
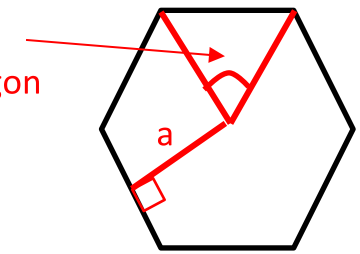
Geometry (G.GMD.1)
Unit Three: Area Formulas Graphic Organizer (IC1)

Name: ______________________________
Date: ______________ Period: ____________

Shape	Area Formula	Diagram/Example	Notes
Square	$A = bh$	$8 = x\sqrt{2}$ $8 \cdot \sqrt{2} = x\sqrt{2} \cdot \sqrt{2}$ $8\sqrt{2} = 2x$ $x = 4\sqrt{2}$  $A = 4\sqrt{2} * 4\sqrt{2} = 16 * 2 = 32\ u^2$	• All sides are ≅ • Parallelogram, rectangle, rhombus formulas work too.
Rectangle	$A = bh$	$8^2 + x^2 = 17^2$ $64 + x^2 = 289$ $x^2 = 225$ $x = 15$  $A = bh$ $A = 15 * 8 = 120\ u^2$	
Parallelogram	$A = bh$	$12 = x\sqrt{2}$ $12 \cdot \sqrt{2} = x\sqrt{2} \cdot \sqrt{2}$ $12\sqrt{2} = 2x$ $x = 6\sqrt{2}$  $A = 6\sqrt{2} * 19\sqrt{2} = 114 * 2 = 228\ u^2$	
Triangle	$A = \frac{1}{2}bh$ $A = \frac{1}{2}ab\sin C$	$37^2 = 12^2 + h^2$ $h = 35$  $A = \frac{1}{2}(24)(35)$ $= 420\ u^2$	• Base and height must be ⊥ • Special Δs, Pythagorean thm., trig., etc. can help to find missing heights or bases.
Rhombus	$A = bh$ $A = \frac{1}{2}d_1 d_2$	$55^2 = 44^2 + x^2$ $x = 33$  $A = \frac{1}{2}d_1 d_2$ $A = \frac{1}{2}(88)(66) = 2904\ u^2$	• Use WHOLE diagonals when using $A = \frac{1}{2}d_1 d_2$

Trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$	$A = \frac{1}{2}h(b_1 + b_2)$ $A = \frac{1}{2}(6)(11+23)$ $A = 102\ u^2$  	• Isoscelese trapezoids have 2 ≅ legs.
Circle	$A = \pi r^2$ $C = 2\pi r = \pi d$	 	• 2 radii = diameter • If answer is to be exact, don't actually multiply by π
Regular Polygon (all sides ≅)		Central angle = $\frac{360}{n}$ n = # of sides in polygon  a = apothem p = perimeter	• Hexagons have special right triangles (30 – 60 – 90) that can be used to keep answers exact.