

Name: Answer Key

Period: _____

1.5-1.6 Review Worksheet

- 1) $\angle DEF$ and $\angle FEG$ are complementary. $m\angle DEF = 3x - 4$ and $m\angle FEG = 5x + 6$. Find the $m\angle DEF$ and $m\angle FEG$

$$3x - 4 + 5x + 6 = 90$$

$$8x + 2 = 90$$

$$8x = 88$$

$$x = 11$$

$$m\angle DEF = 3(11) - 4 = 33 - 4 = 29$$

$$m\angle FEG = 5(11) + 6 = 55 + 6 = 61$$

- 2) $\angle ABC$ and $\angle GHI$ are supplementary angles. $m\angle ABC = 8x - 2$ and $m\angle GHI = x + 20$. Find x .

$$8x - 2 + x + 20 = 180$$

$$9x + 18 = 180$$

$$9x = 162$$

$$x = 18$$

- 3) Find the angle, complement, and supplement if the supplement is ten more than twice the complement of an angle.

$$180 - A = 2(90 - A) + 10$$

$$180 - A = 180 - 2A + 10$$

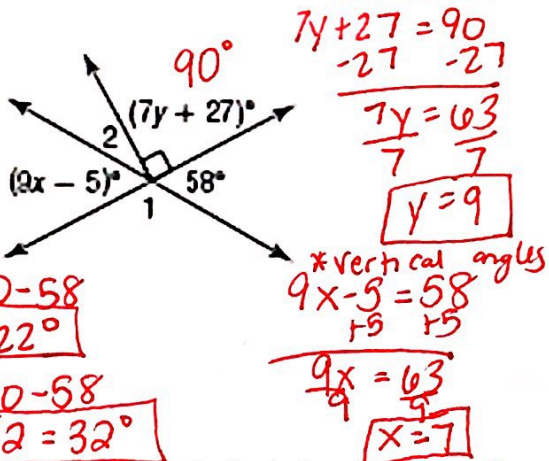
$$-A = -2A + 10$$

$$+2A \quad +2A$$

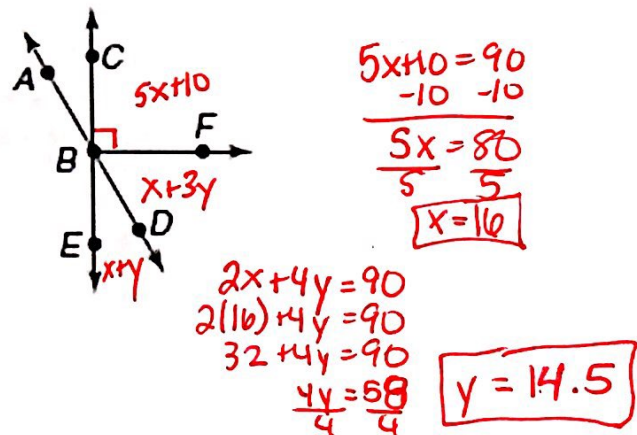
$$A = 10$$

Angle = 10°
 Complement = $90 - 10 = 80^\circ$
 Supplement = $180 - 10 = 170^\circ$

- 4) Find x , y , $m\angle 1$, and $m\angle 2$.

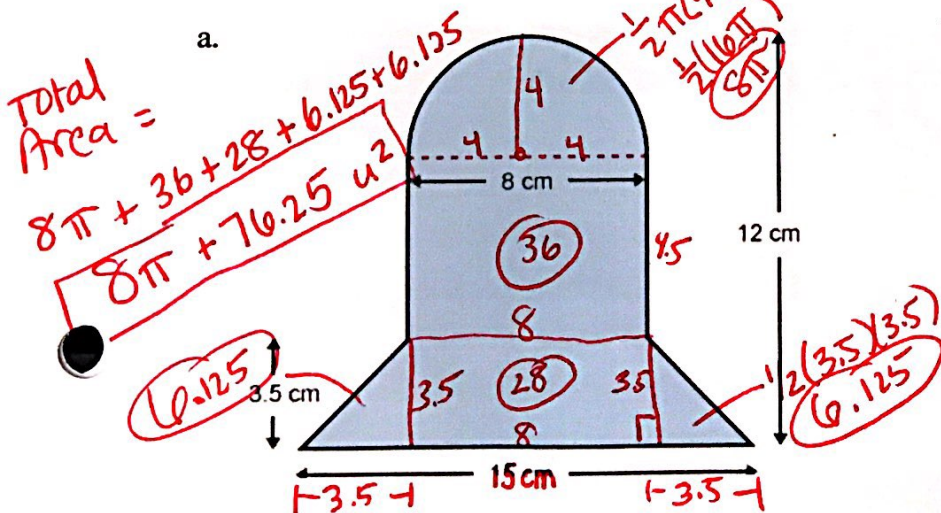


- 5) Find x and y so that \overline{CE} and \overline{BF} are perpendicular. If $m\angle CBF = 5x + 10$, $m\angle EBD = x + y$, and $m\angle FBD = x + 3y$.

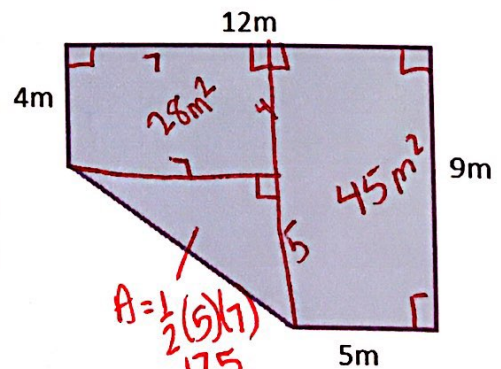


- 6) Find the area of each shaded region.

a.



b.



7) Find the perimeter and the area of the quadrilateral with points A(2,1), B(5,5), C(5,12), and D(-3,13).

Perimeter * Distance Formulas

$$AB = \sqrt{(-3)^2 + (4)^2} = \sqrt{9+16} = \sqrt{25} = 5u$$

$$BC = \sqrt{0^2 + 7^2} = \sqrt{49} = 7u$$

$$CD = \sqrt{8^2 + (-1)^2} = \sqrt{64+1} = \sqrt{65}u$$

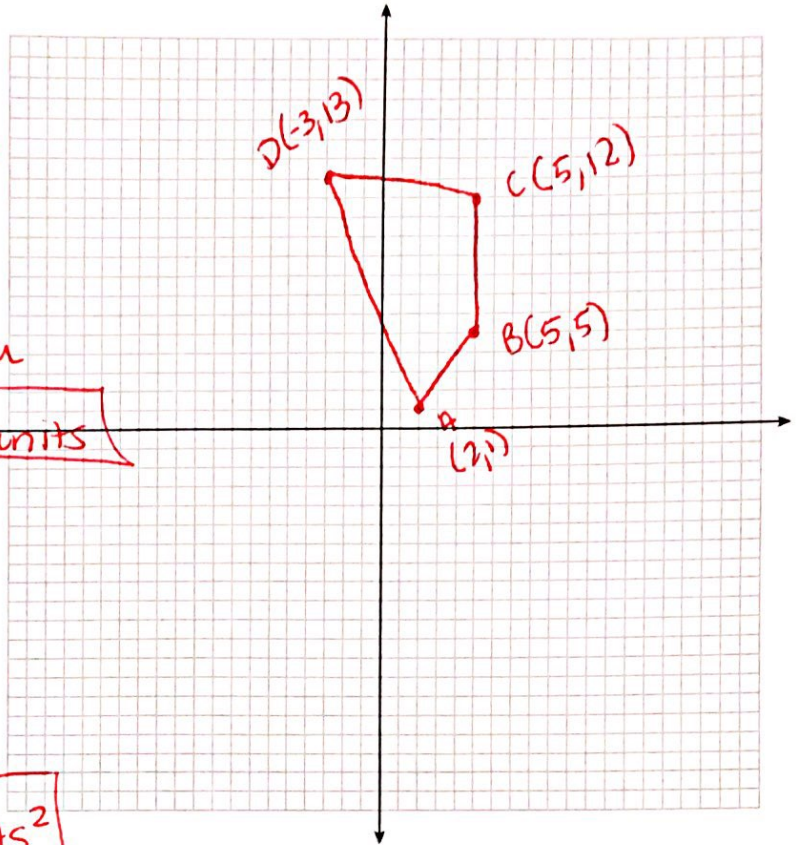
$$DA = \sqrt{(5)^2 + (-12)^2} = \sqrt{25+144} = \sqrt{169} = 13u$$

$$\text{Perimeter} = 5 + 7 + \sqrt{65} + 13 = \boxed{25 + \sqrt{65} \text{ units}}$$

Area

	-3	13	
65	5	12	-36
60	5	5	25
10	2	1	5
-3	-3	13	26
132			20
	2		

$$\text{Area} = \boxed{56 \text{ units}^2}$$



8) Approximate to the nearest unit the perimeter and find the exact area of the polygon with points D(2,2), E(5,5), G(4,8), H(0,6), and J(-2,-2).

Perimeter

$$JD = \sqrt{(-4)^2 + (-4)^2} = \sqrt{16+16} = \sqrt{32} = 4\sqrt{2}$$

$$DE = \sqrt{(-3)^2 + (-3)^2} = \sqrt{9+9} = \sqrt{18} = 3\sqrt{2}$$

$$EG = \sqrt{1^2 + (-3)^2} = \sqrt{1+9} = \sqrt{10}$$

$$GH = \sqrt{4^2 + 2^2} = \sqrt{16+4} = \sqrt{20} = 2\sqrt{5}$$

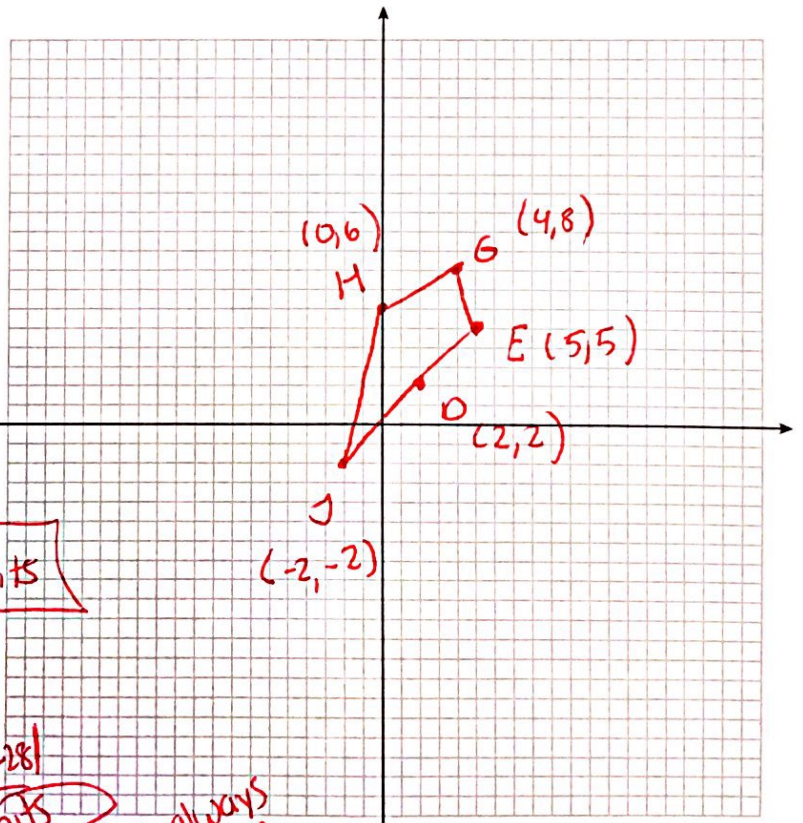
$$HJ = \sqrt{(-2)^2 + 8^2} = \sqrt{4+64} = \sqrt{68} = 2\sqrt{17}$$

$$\boxed{P \approx 25.7801 \approx 26 \text{ units}}$$

	2	2	
10	5	5	10
20	4	8	40
0	0	6	24
-12	-2	2	0
-4	2	2	-4
14			70

$$\text{Area} = \boxed{28 \text{ units}^2}$$

* Area is always positive



Area