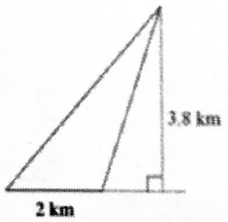
Name: KEY Period: _____ Date: _____

Area of Triangles and Quadrilaterals (R)

Level 1:

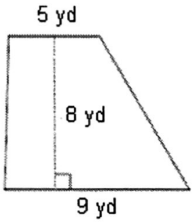
1.)



$\frac{1}{2}(2)(3.8) =$

$3.8\ km^2$

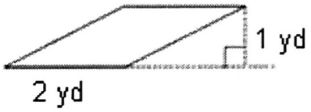
2.)



$\left(\frac{5+9}{2}\right) \cdot 8 =$

$56\ yd^2$

3.)



$2(1) =$

$2\ yd^2$

4.) A triangle's area is 40 square centimeters. What is the height of the triangle if the base is 8 cm?
(Hint: If Area = ½(base)(height), rewrite the formula using the given area and base values.)

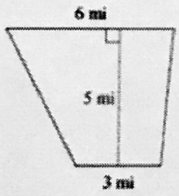
$40 = \frac{1}{2}(8)(h)$

$40 = 4h$ $h = 10\ cm$

---------- Checkpoint ----------

Level 2:

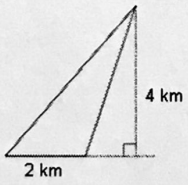
5.)



$\left(\frac{3+6}{2}\right) \cdot 5 =$

$22.5\ mi^2$

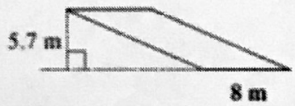
6.)



$\frac{1}{2}(2)(4) =$

$4\ km^2$

7.)



$8(5.7) =$

$45.6\ m^2$

8.) A trapezoid's area is 144 square inches. What is the height of the trapezoid if the two bases of the trapezoid are 16 in. and 24 in.? *(Hint: Use the formula for area of a triangle and plug in the given information.)*

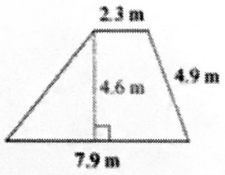
$144 = \left(\frac{16+24}{2}\right) \cdot h$

$144 = 20h$ $h = 7.2\ in$

---------- Checkpoint ----------

Level 3:

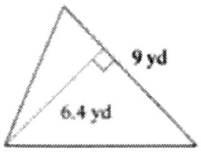
9.)



$\left(\frac{2.3+7.9}{2}\right) \cdot 4.6 =$

$23.46\ m^2$

10.)



$\frac{1}{2}(9)(6.4)$

$28.8\ yd^2$

11.) The floor of Taylor's bathroom is covered with tiles in the shape of triangles. Each triangle has a height of 7 in. and a base of 12 in. If the floor of her bathroom has 40 tiles, what is the area of the bathroom floor?

$\frac{1}{2}(12)(7) = 42\ in^2$ per tile

$42(40) = 1,680\ in^2$

12.) The area of a trapezoid is 156 square centimeters. One base has a length of 11 centimeters and the height of the trapezoid is 13 centimeters. What is the length of the second base?

$156 = \left(\frac{11+x}{2}\right)(13)$

Divide by 13

$12 = \frac{11+x}{2}$

Mult. by 2

$24 = 11 + x$

$x = 13\ cm$

---------- Checkpoint ----------

Level 4: *(Hint: For each scenario, ask yourself which is more appropriate, **area** or **perimeter**.)*

13.) The area of a rectangular vegetable patch is 24 square meters. It is 4 meters wide. How long is it?

$4 \cdot l = 24$ $\quad l = 6m$

14.) Rita's living room is 3 meters wide and 6 meters long. She wants to put a border around the top of the room. The cost of the border is $3.16 per meter. How much will it cost to buy enough of the border to go around the room?

$3+6+3+6 = 18\ m$ (perimeter)

$18 \cdot 3.16 = \$56.88$

15.) Vera's pool table is 3 feet wide and 7 feet long. Vera wants to replace the felt on the pool table. The felt costs $4.29 per square foot. How much would it cost in total to replace the felt on the pool table?

$3 \cdot 7 = 21\ ft^2$ (area)

$21 \cdot 4.29 = \$90.09$

16.) A photograph is 6 inches by 9 inches. A frame shop charges $1.86 per inch for a silver frame. How much would it cost to buy a silver frame for the photograph?

$6+9+6+9 = 30\ in$ (perimeter)

$30 \cdot 1.86 =$

$\$55.80$