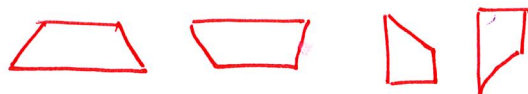


### 4.3 Area of Trapezoids Notes

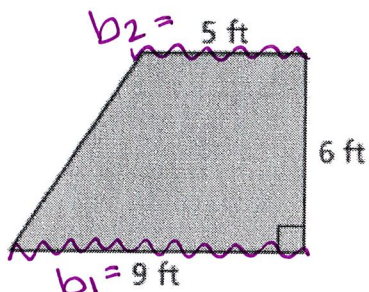


A trapezoid has 4 sides and 1 set of lines are parallel.

Area of a Trapezoid:

$$\text{Area} = \frac{1}{2} \times \underset{\substack{\uparrow \\ \text{distance} \\ \text{between} \\ \text{bases}}}{\text{height}} \times \left( \underset{\substack{\uparrow \\ \text{parallel} \\ \text{lines}}}{\text{base 1}} + \underset{\substack{\uparrow \\ \text{parallel} \\ \text{lines}}}{\text{base 2}} \right)$$

Find the area of each trapezoid. Be sure to show your formula, substitution, & answer with label!

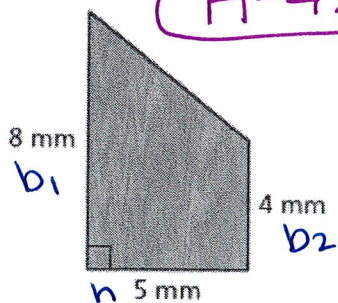


$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 6 \cdot (5 + 9)$$

$$A = \frac{1}{2} \cdot 6 \cdot 14$$

$$A = 42 \text{ ft}^2$$

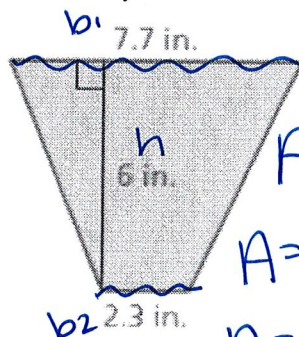


$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 5 \cdot (8 + 4)$$

$$A = \frac{1}{2} \cdot 5 \cdot 12$$

$$A = 30 \text{ mm}^2$$

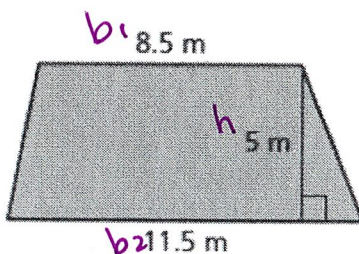


$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 6 \cdot (7.7 + 2.3)$$

$$A = \frac{1}{2} \cdot 6 \cdot 10$$

$$A = 30 \text{ in.}^2$$



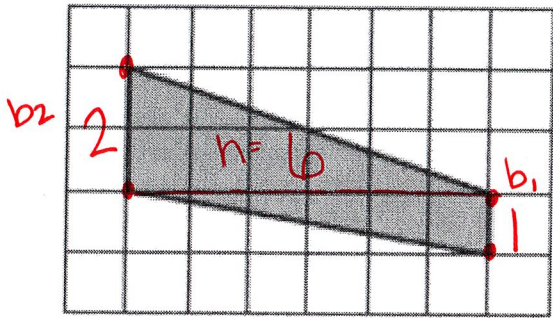
$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 5 \cdot (8.5 + 11.5)$$

$$A = \frac{1}{2} \cdot 5 \cdot 20$$

$$A = 50 \text{ m}^2$$

Find the area of each trapezoid. Be sure to show your formula, substitution, & answer with label

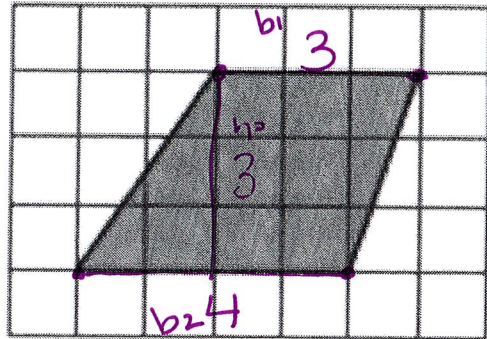


$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 2 \cdot (1 + 6)$$

$$A = 1 \cdot 6 \cdot 3$$

$$A = 9 \text{ units}^2$$



$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 3 \cdot (3 + 4)$$

$$A = \frac{1}{2} \cdot 3 \cdot 7$$

$$A = 10.5 \text{ units}^2$$

You can use a trapezoid to approximate the shape of Scott County, Virginia. The population is about 23,200. About how many people are there per square mile?

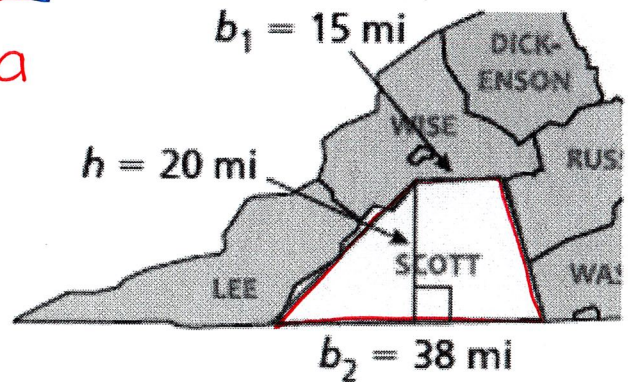
$$A = \frac{1}{2} \cdot h \cdot (b_1 + b_2)$$

$$A = \frac{1}{2} \cdot 20 \cdot (15 + 38)$$

$$A = \frac{1}{2} \cdot 20 \cdot 53$$

$$A = 530 \text{ mi}^2$$

area



people per sq. mile

$$23,200 \div 530 = 43.7735 \dots$$

ABOUT 44 PEOPLE