

Chapter 9 Test Review

Name: Key  
 Per. \_\_\_\_\_ Group #: \_\_\_\_\_

**\*\*Directions\*\*** Show **ALL** your work for each question, including writing out formulas. Use the  $\pi$  button on your calculator where necessary. Round your answers to the hundredths place and **box** your answers.

1. A rectangle has a perimeter of 72 inches. The height is three times the length of the base. Find the **area** of the rectangle.

$$h = 3b$$

$$3b + 3b + b + b = 72$$

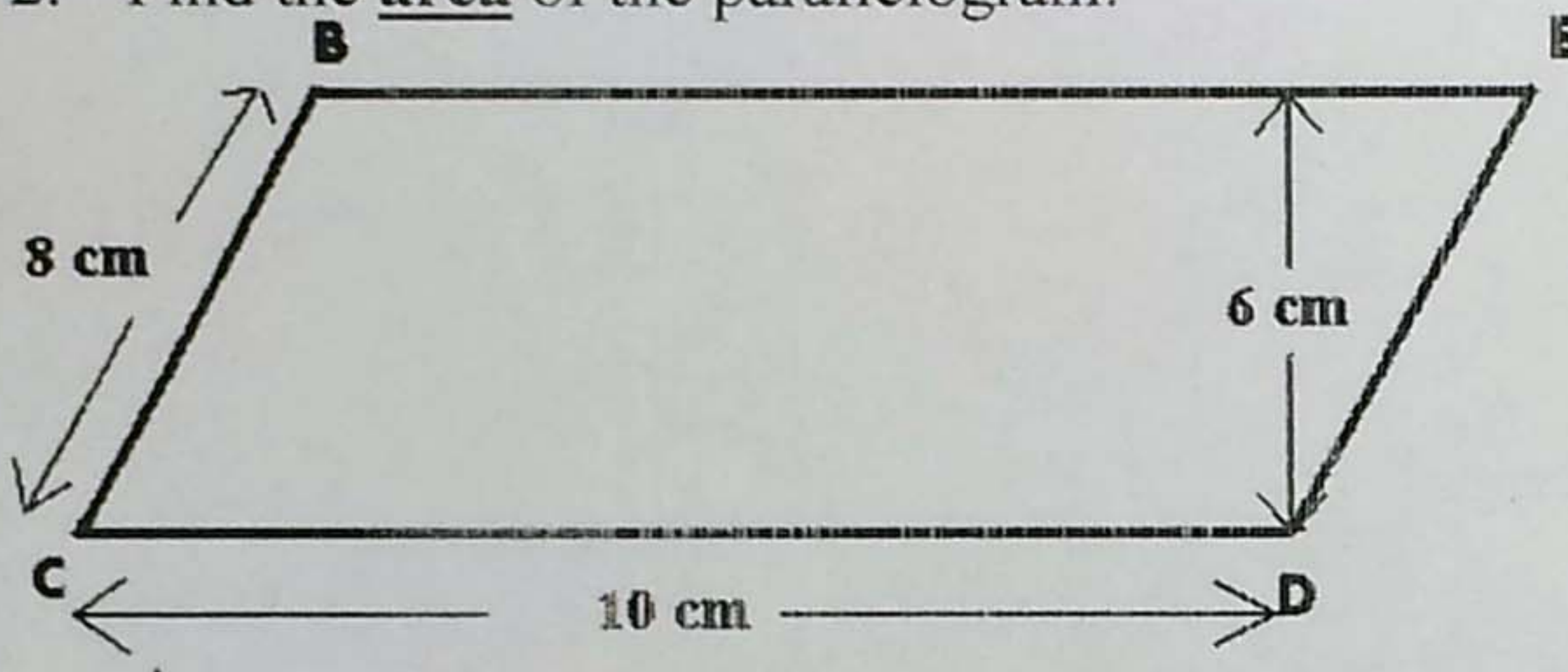
$$8b = 72$$

$$b = 9$$

$$h = 3(9) = 27$$

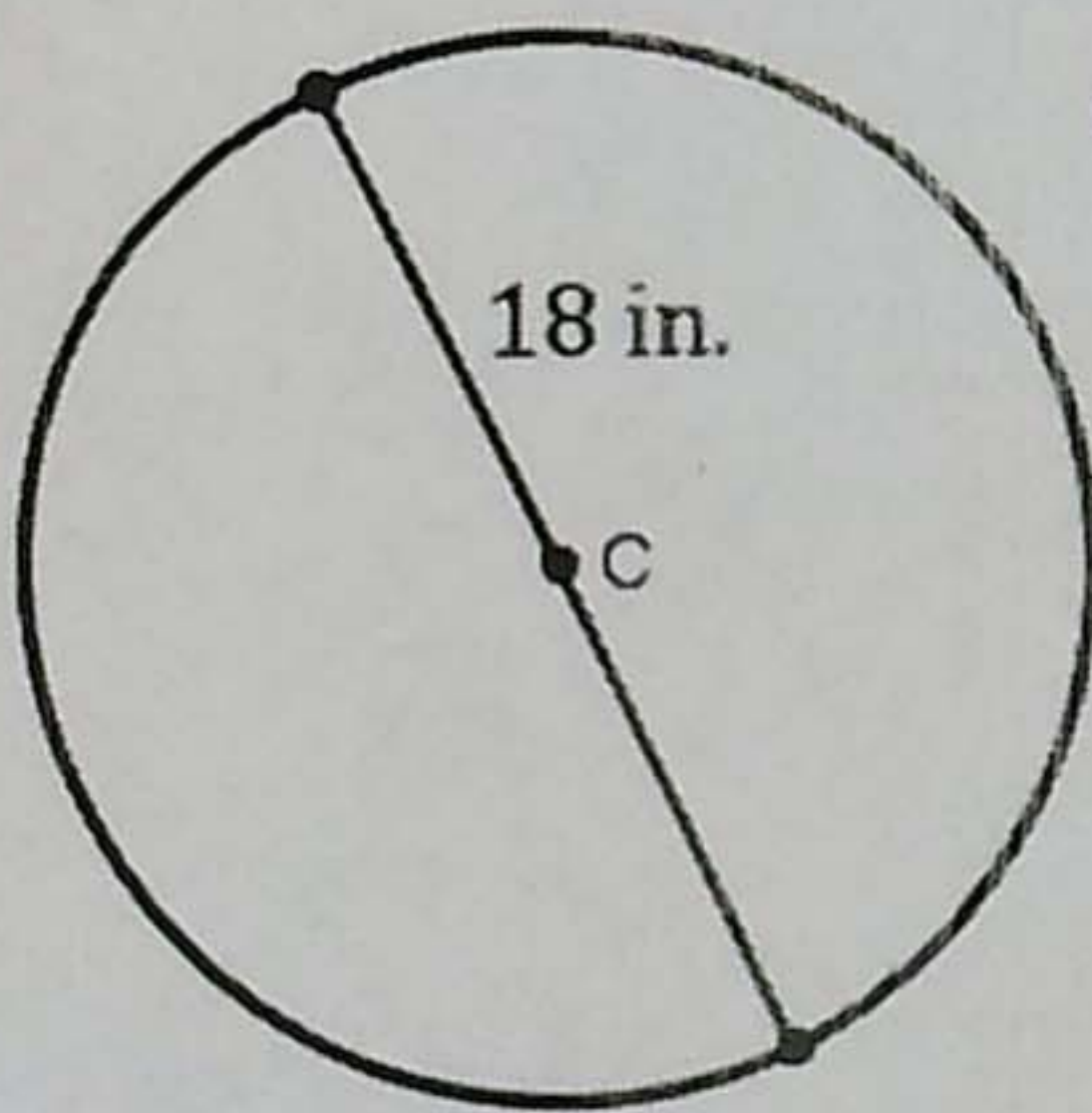
$$A = bh = (9)(27) = 243 \text{ in}^2$$

2. Find the **area** of the parallelogram.



$$A = bh = (10)(6) = 60 \text{ cm}^2$$

3. Find the **circumference** and **area** of circle C.



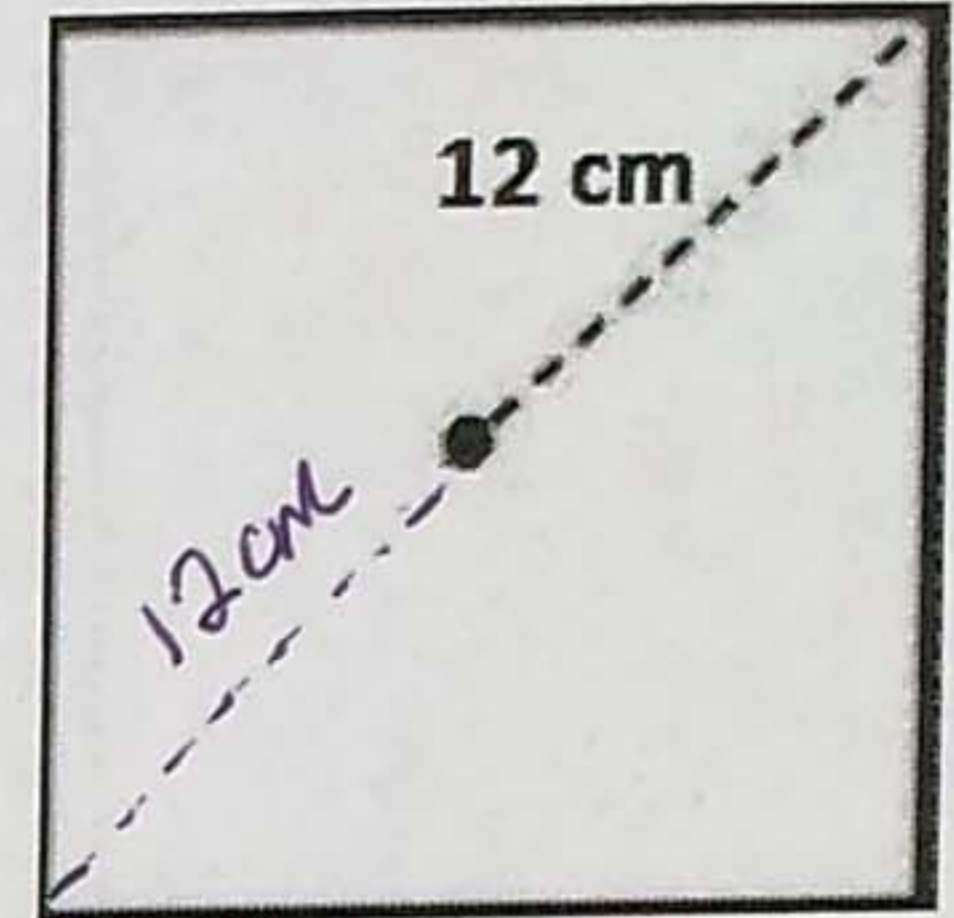
$$d = 18 \text{ in. } r = 9 \text{ in}$$

$$C = 2\pi r = 2\pi(9) = 18\pi \approx 56.55 \text{ in}$$

$$A = \pi r^2 = \pi(9)^2 = \pi(81) \approx 254.47 \text{ in}^2$$

4. Find the **area** of the square.

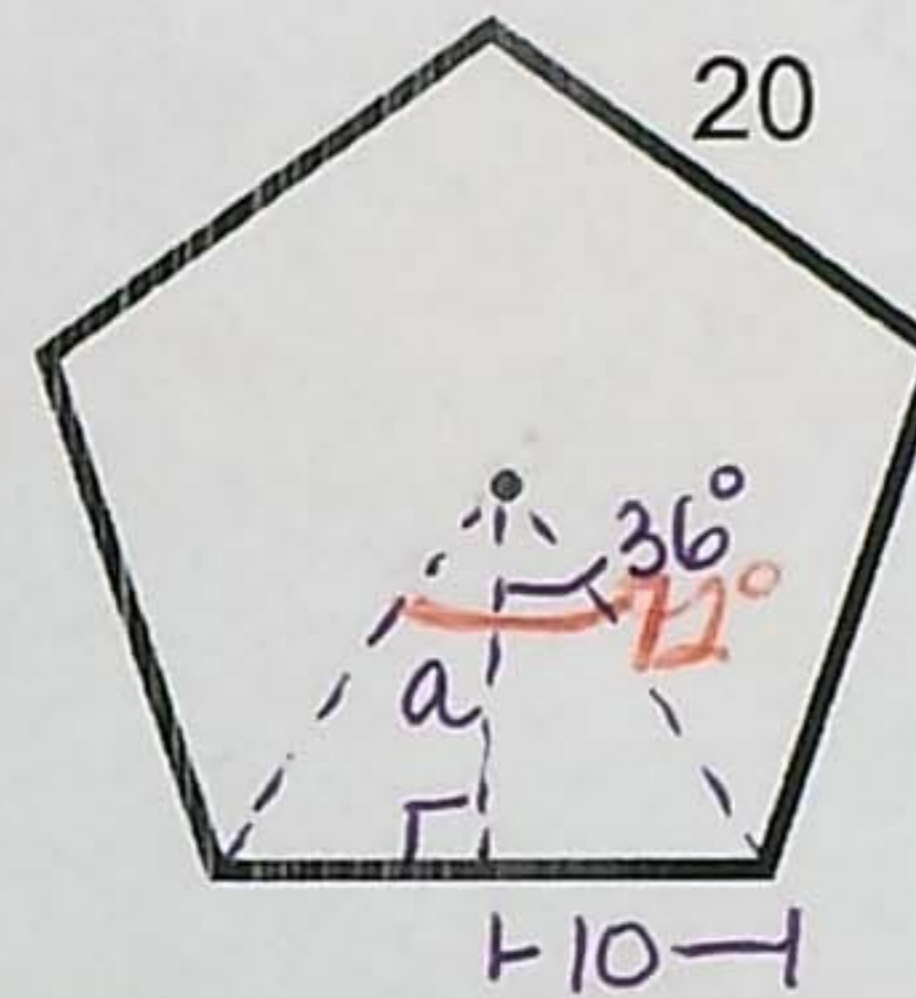
$$A = \frac{1}{2}(d_1)(d_2) = \frac{1}{2}(24)(24) = 288 \text{ cm}^2$$



$$d_1 = 24 \text{ cm}$$

$$d_2 = 24 \text{ cm}$$

5. Find the **area** of the regular pentagon.



$$\frac{360}{5} = 72$$

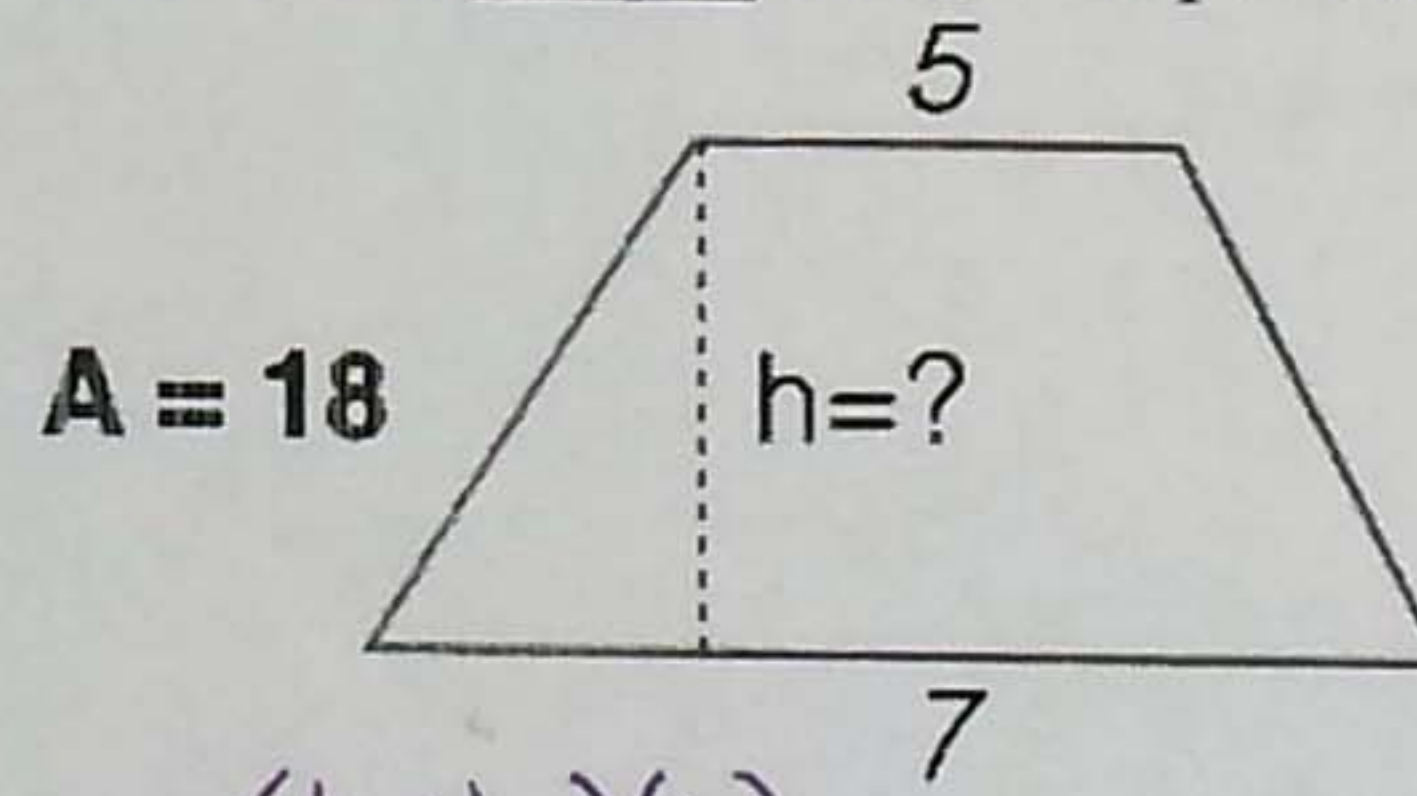
$$\text{TAN } 36 = \frac{10}{a}$$

$$a \approx 13.76$$

$$P = 5(20) = 100$$

$$A = \frac{1}{2}(13.76)(100) \approx 688.19 \text{ units}^2$$

6. Find the **height** of the trapezoid below:



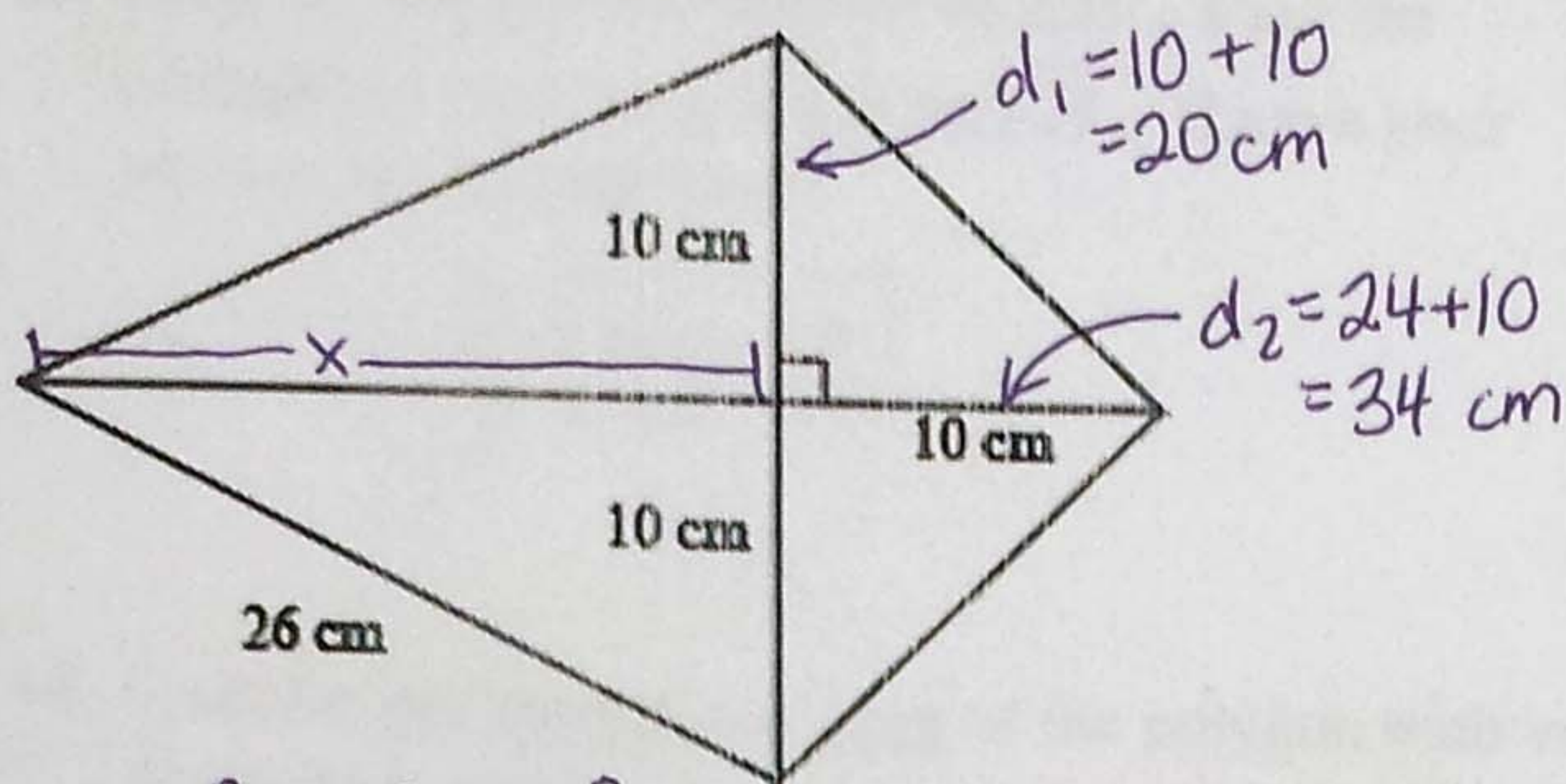
$$A = \frac{(b_1 + b_2)(h)}{2}$$

$$18 = \frac{(5 + 7)(h)}{2}$$

$$36 = (12)(h)$$

$$3 = h$$

7. Find the area of the kite.



$$10^2 + x^2 = 26^2$$

$$x^2 = 576$$

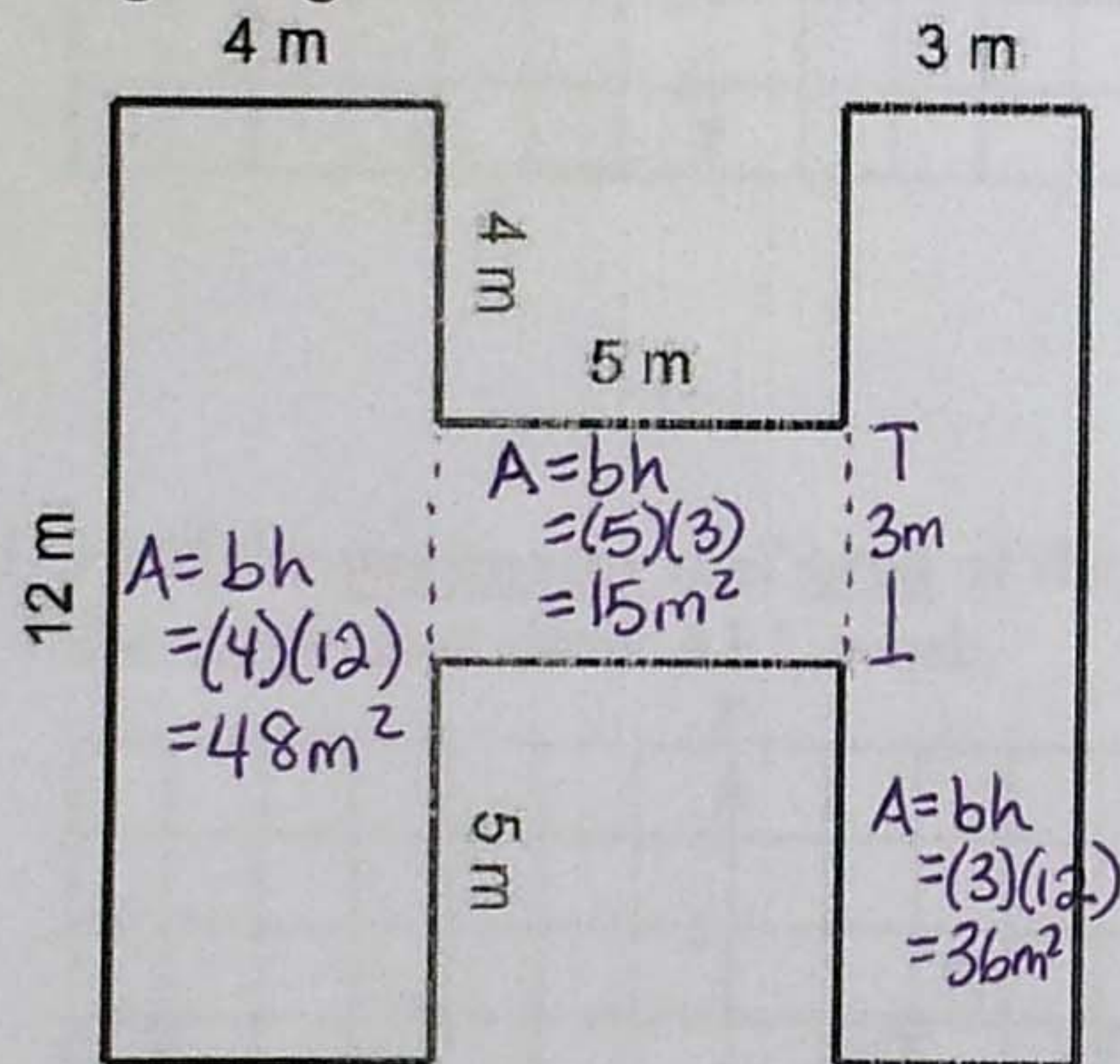
$$x = 24$$

$$A = \frac{1}{2} (d_1)(d_2)$$

$$= \frac{1}{2} (20)(34)$$

$$= 340 \text{ cm}^2$$

8. Find the area of the figure. Assume all angles are right angles.



$$A = 48 + 20 + 36$$

$$= 104 \text{ m}^2$$

9. The base and height of a parallelogram are multiplied by 4. What is the effect on the area of the parallelogram? Answer in a complete sentence.

The area is multiplied by  $4^2$  or 16.

10. Find the probability that a dart that hits the large square target at a random point will hit the shaded region.

whole shape:

$$A = s^2$$

$$= (9)^2$$

$$= 81$$

shaded area:

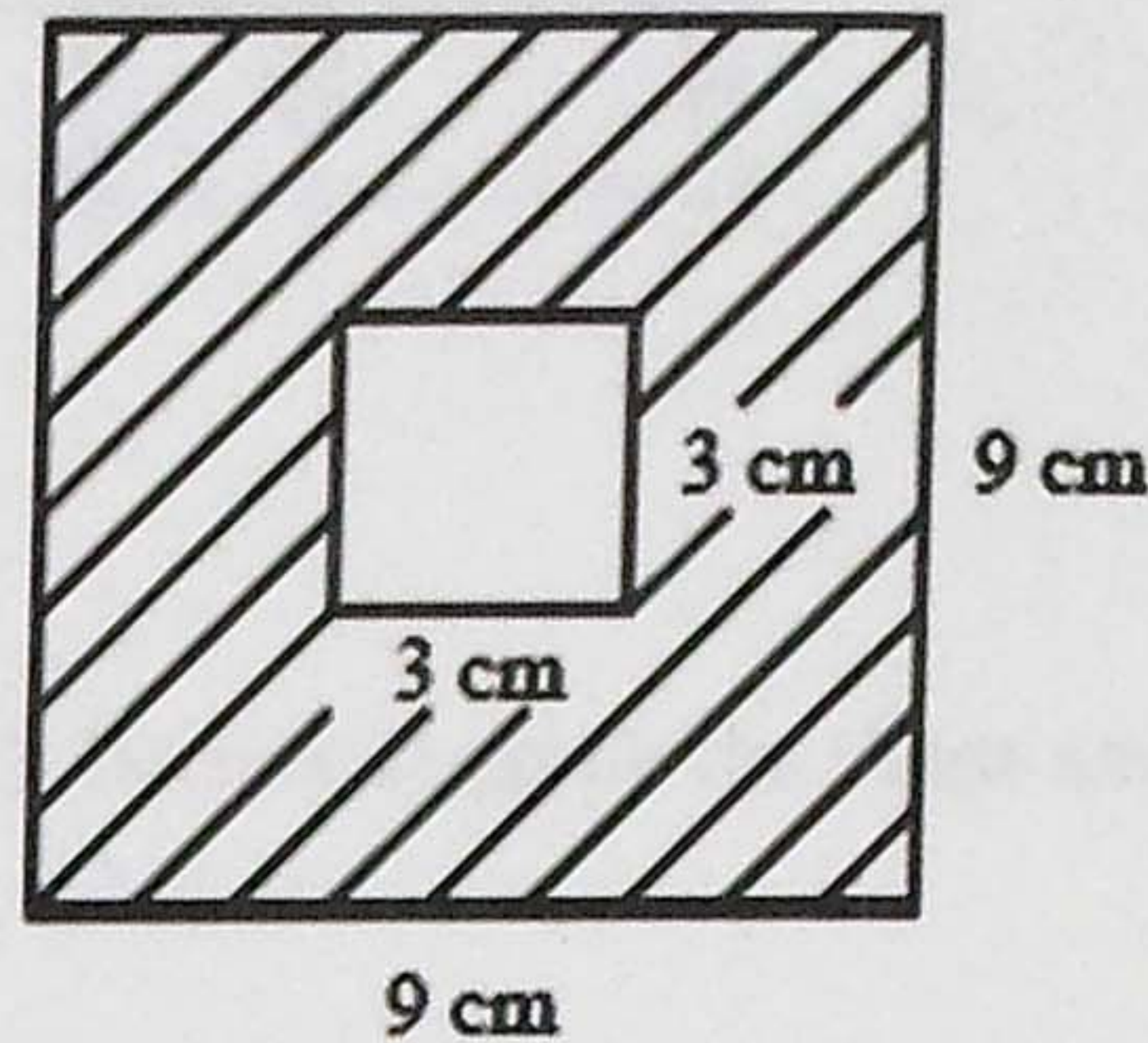
$$A = 81 - (3)^2$$

$$= 81 - 9$$

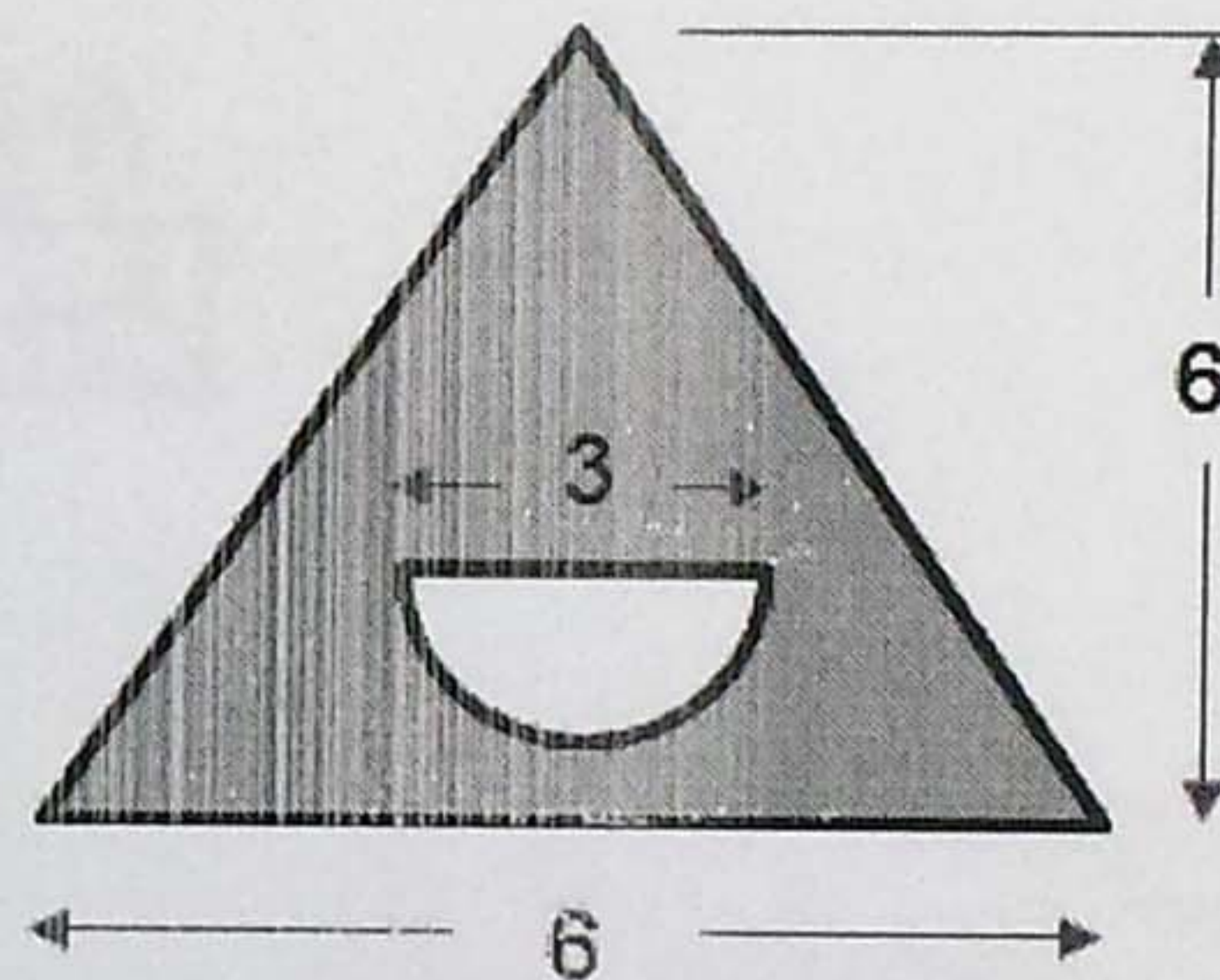
$$= 72$$

P(shaded region):

$$\frac{72}{81} = \frac{8}{9} \approx 0.89$$



11. Find the area of the shaded region of the figure.



$$A_{\Delta} = \frac{1}{2} (b)(h)$$

$$= \frac{1}{2} (6)(6)$$

$$= 18 \text{ units}^2$$

$$A_{\circ} = \frac{1}{2} \pi r^2$$

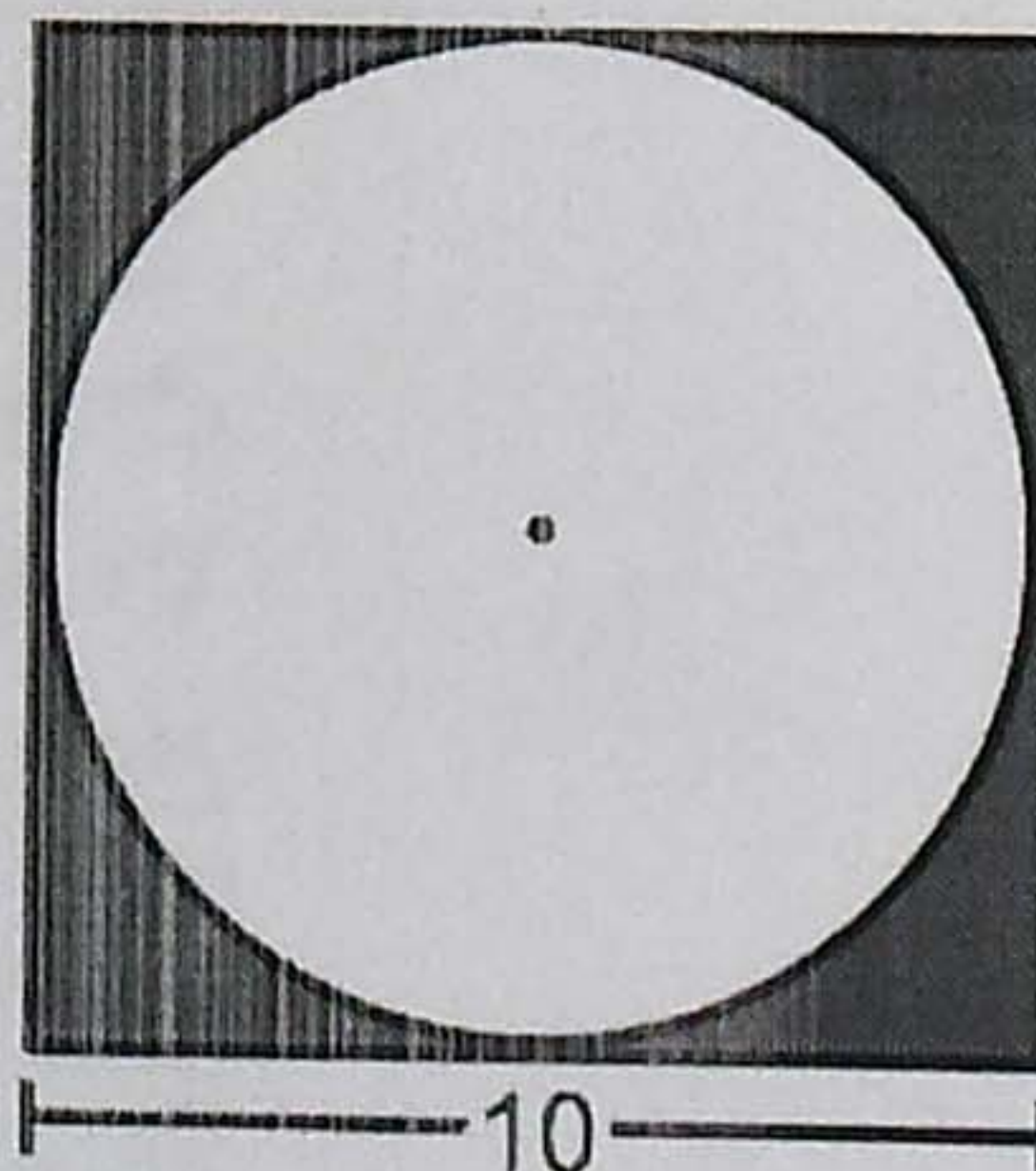
$$= \frac{1}{2} \pi (1.5)^2$$

$$= 1.125 \pi$$

$$A_{\text{shaded}} = 18 - 1.125 \pi$$

$$\approx 14.47 \text{ units}^2$$

12. Given that a circle is inscribed in the square, find the area of the circle.



$$d = 10 \quad r = 5$$

$$A = \pi r^2$$

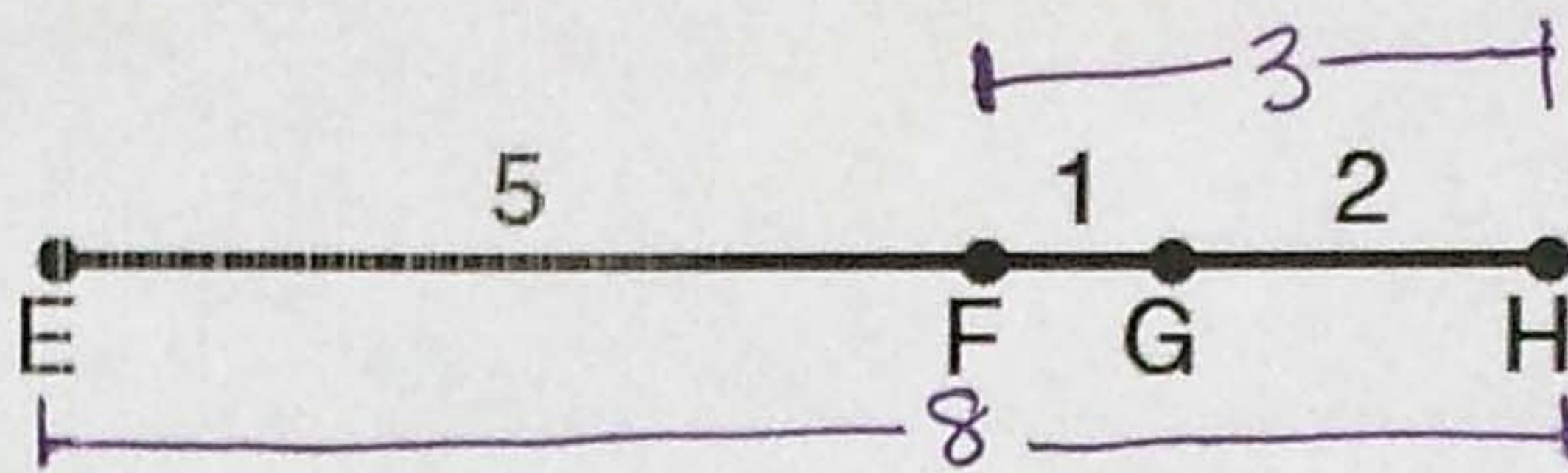
$$= \pi (5)^2$$

$$= \pi (25)$$

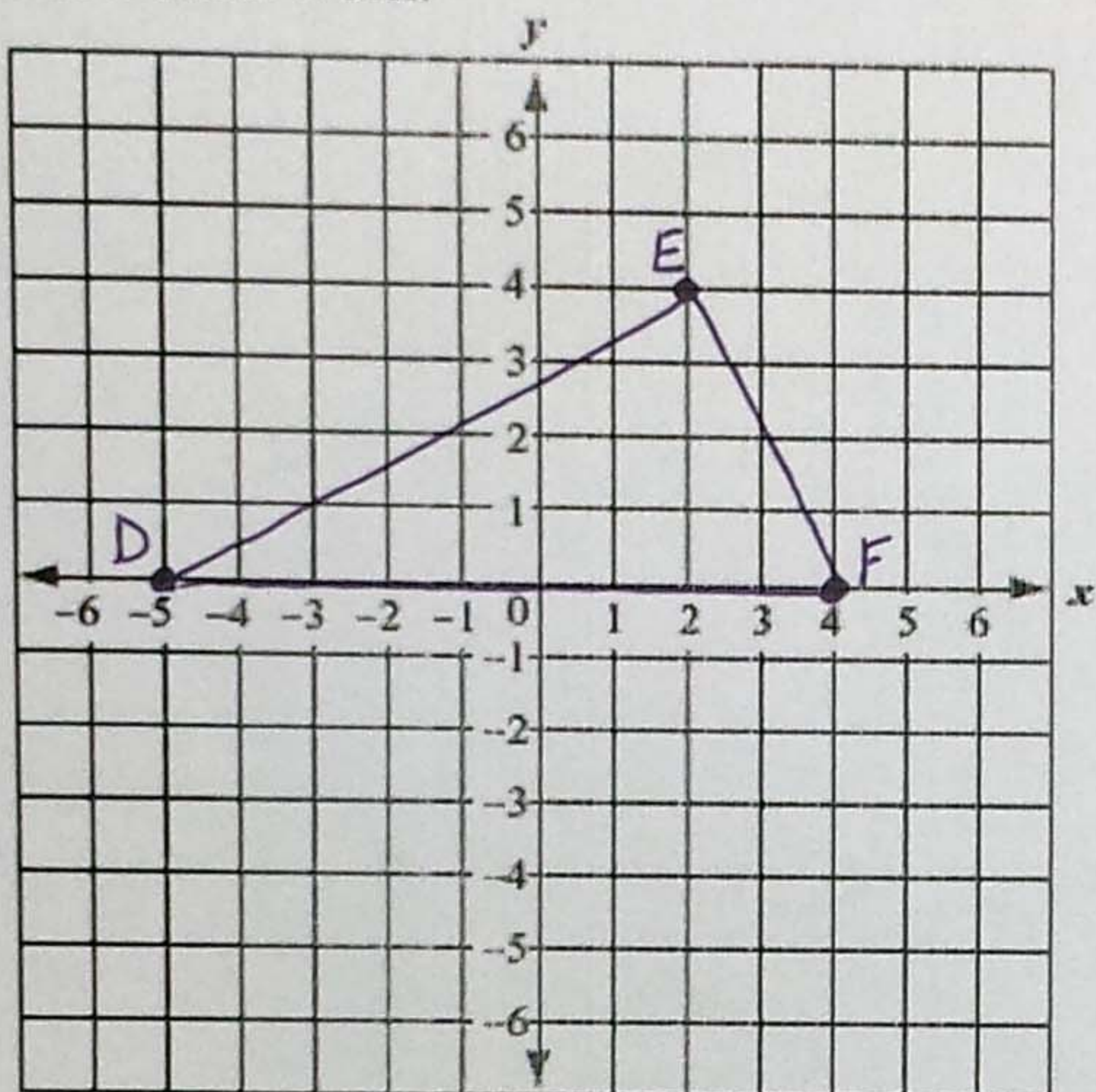
$$\approx 78.54 \text{ units}^2$$

13. A point is chosen at random on  $\overline{EH}$ . Find the probability that the point is on  $\overline{FH}$ . (Leave your answer in decimal form)

$$\frac{3}{8} \approx 0.38$$



14. Find the **perimeter** and **area** of the polygon with vertices  $D(-5, 0)$ ,  $E(2, 4)$  and  $F(4, 0)$ . Be sure to graph the shape and show ALL work.



$$DE = \sqrt{(2 - (-5))^2 + (4 - 0)^2} = \sqrt{65}$$

$$EF = \sqrt{(4 - 2)^2 + (0 - 4)^2} = \sqrt{20} = 2\sqrt{5}$$

$$DF = 9$$

$$P = \sqrt{65} + 2\sqrt{5} + 9$$

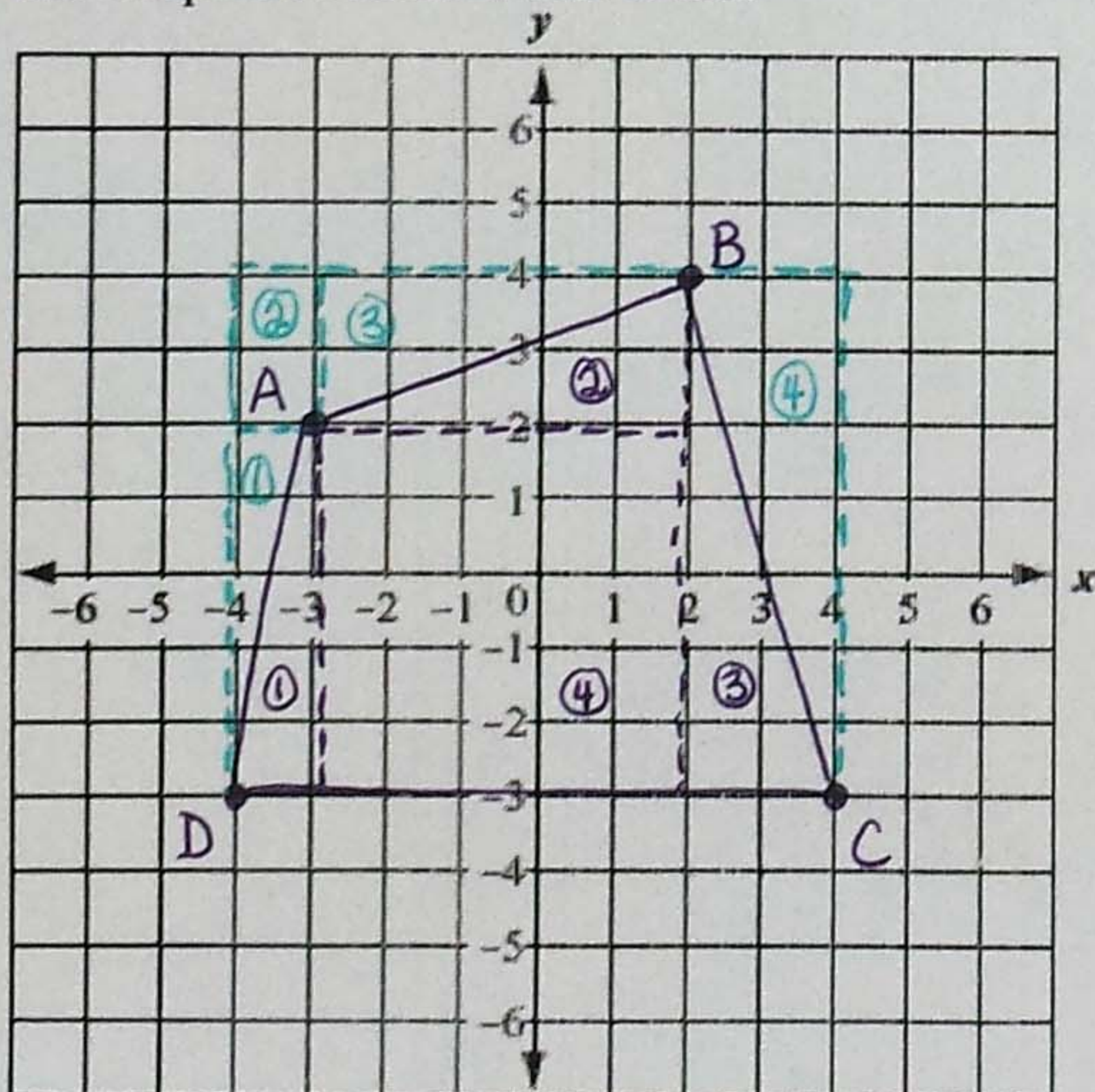
$$\approx 21.53 \text{ units}$$

$$A = \frac{1}{2}bh$$

$$= \frac{1}{2}(9)(4)$$

$$= 18 \text{ units}^2$$

15. Find the **perimeter** and **area** of the polygon with vertices  $A(-3, 2)$ ,  $B(2, 4)$ ,  $C(4, -3)$ , and  $D(-4, -3)$ . Be sure to graph the shape and show ALL work.



$$AB = \sqrt{(2 - (-3))^2 + (4 - 2)^2} = \sqrt{29}$$

$$BC = \sqrt{(4 - 2)^2 + (-3 - 4)^2} = \sqrt{53}$$

$$CD = 8$$

$$AD = \sqrt{(-4 - (-3))^2 + (-3 - 2)^2} = \sqrt{26}$$

$$P = \sqrt{29} + \sqrt{53} + 8 + \sqrt{26}$$

$$\approx 25.76 \text{ units}$$

$$A_{\Delta 1} = \frac{1}{2}(1)(5) = \frac{5}{2}$$

$$A_{\Delta 2} = \frac{1}{2}(5)(2) = 5$$

$$A_{\Delta 3} = \frac{1}{2}(2)(7) = 7$$

$$A_{\square 4} = (5)(5) = 25$$

$$A = \frac{5}{2} + 5 + 7 + 25$$

$$= 39.5 \text{ units}^2$$

OR

$$A_{\square} = (8)(7) = 56$$

$$A_{\Delta 1} = \frac{1}{2}(1)(5) = \frac{5}{2}$$

$$A_{\square 2} = (1)(2) = 2$$

$$A_{\Delta 3} = \frac{1}{2}(5)(2) = 5$$

$$A_{\Delta 4} = \frac{1}{2}(2)(7) = 7$$

$$A = 56 - \frac{5}{2} - 2 - 5 - 7$$

$$= 39.5 \text{ units}^2$$