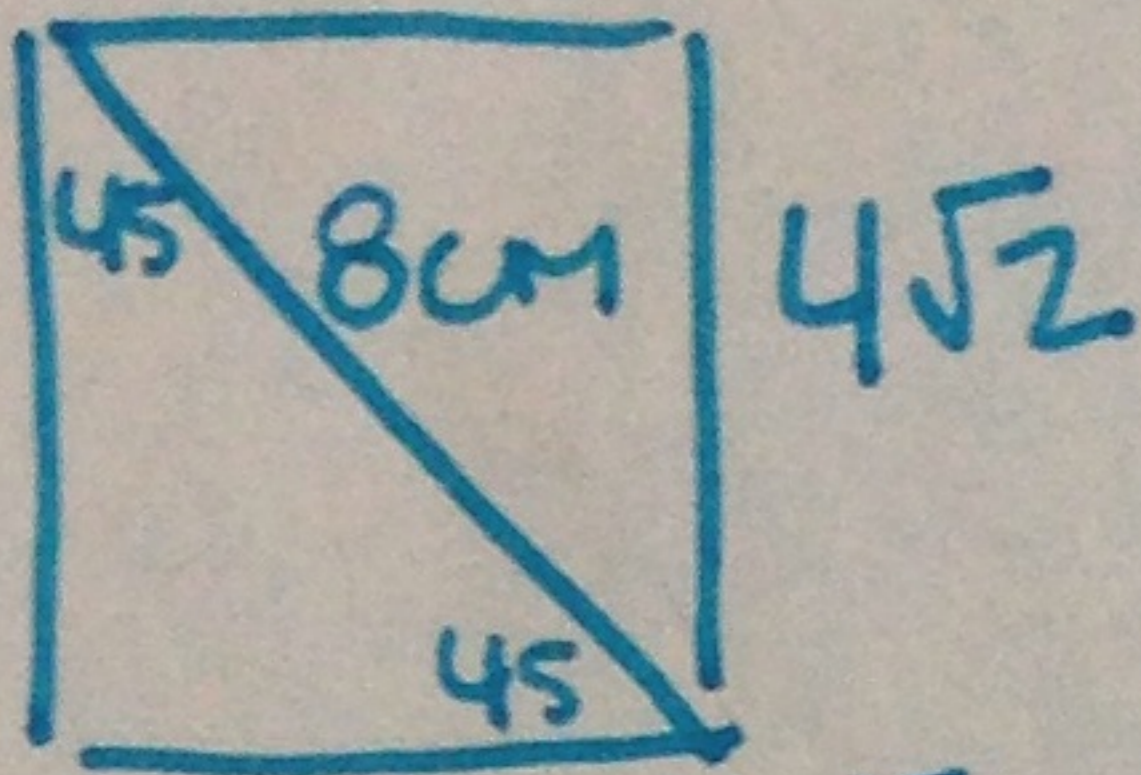


Chapter 10

#1-9: Give answers in simplest form. No decimals!

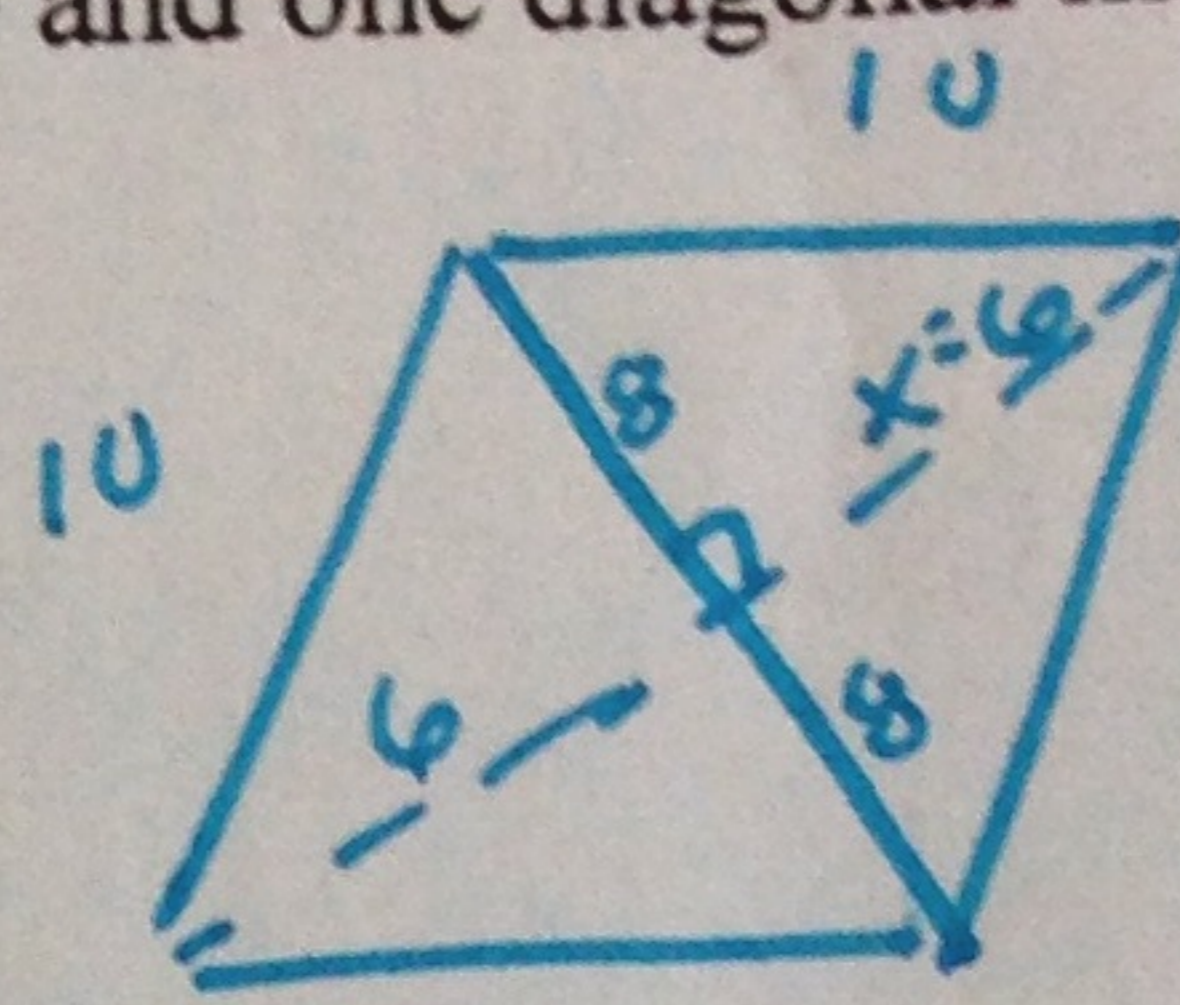
1. The diagonal of a square is 8 cm. Find the area of the square.



$$\frac{8}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{8\sqrt{2}}{2} = 4\sqrt{2}$$

$$A = (4\sqrt{2})(4\sqrt{2}) = 16 \cdot 2 = 32 \text{ cm}^2$$

2. Find the area of a rhombus if its perimeter is 40 and one diagonal measures 16.



$$x^2 + 8^2 = 10^2$$

$$x^2 + 64 = 100$$

$$x^2 = 36$$

$$x = 6$$

$$d_1 = 16$$

$$d_2 = 12$$

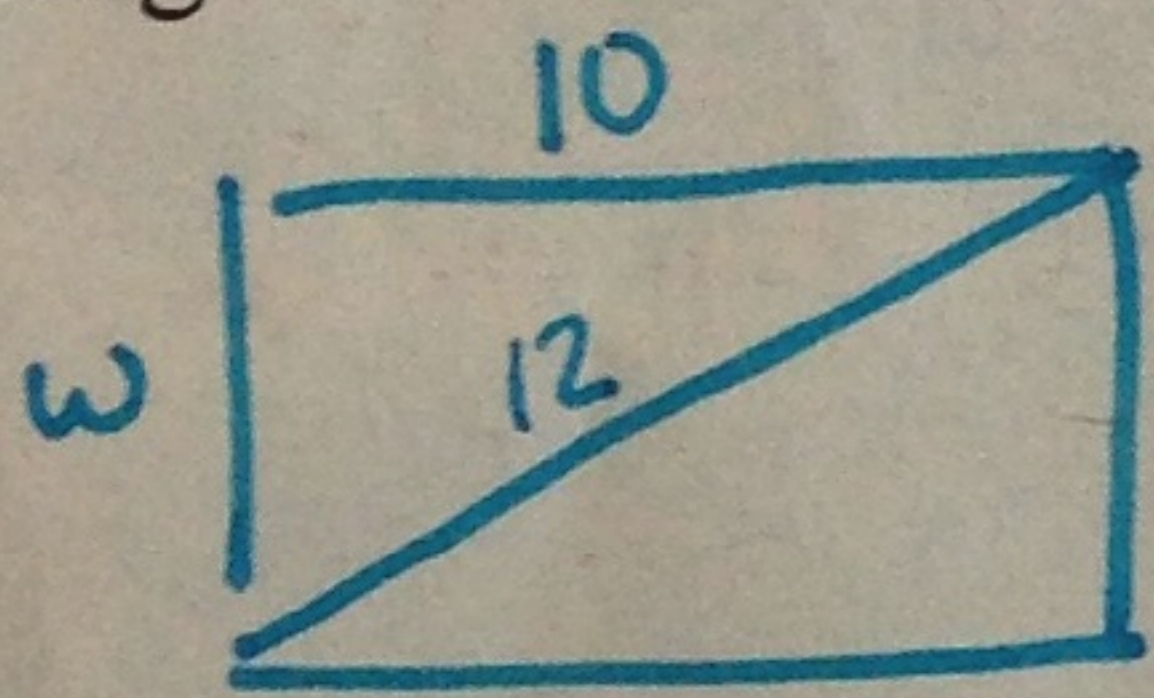
$$A = \frac{1}{2} (16)(12)$$

$$= 8(12)$$

$$= 96 \text{ cm}^2$$

units²

3. Find the area of a rectangle with length 10 and diagonal 12.



$$12^2 = 10^2 + w^2$$

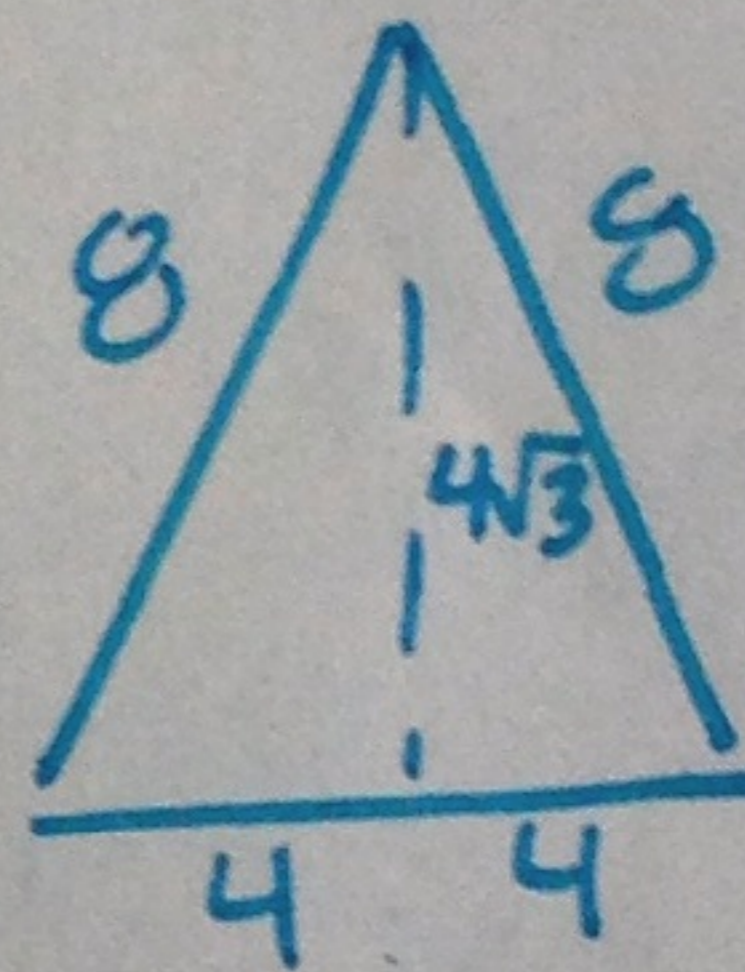
$$144 = 100 + w^2$$

$$44 = w^2$$

$$2\sqrt{11} = w$$

$$A = 2\sqrt{11}(10) = 20\sqrt{11}$$

4. Find the area of an equilateral triangle with perimeter 24.

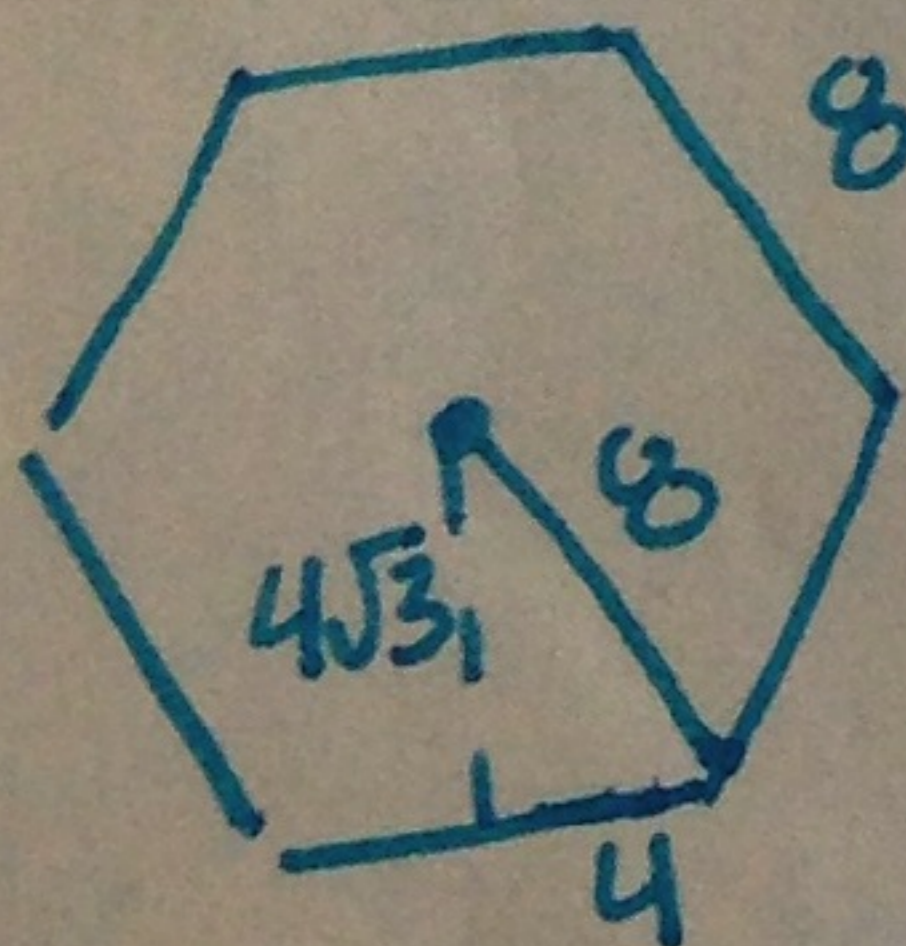


$$\frac{1}{2}bh$$

$$\frac{1}{2}(8)(4\sqrt{3})$$

$$16\sqrt{3}$$

5. Find the apothem and area of a regular hexagon with radius 8.



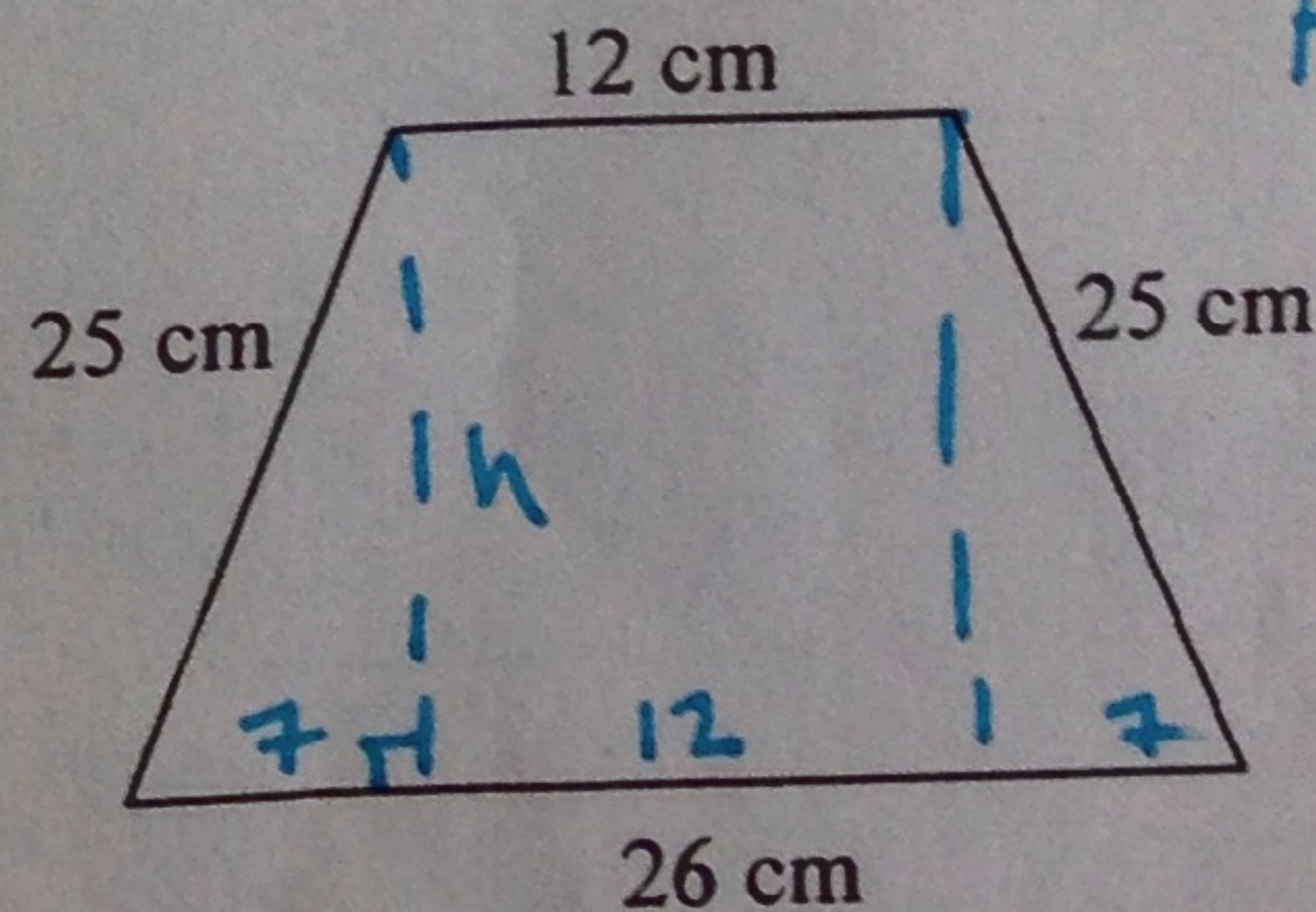
$$\frac{1}{2}aP$$

$$= \frac{1}{2}(4\sqrt{3})(48)$$

$$= 96\sqrt{3}$$

$$P = 48$$

6. Find the area of this isosceles trapezoid.



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

$$= \frac{24(12 + 26)}{2}$$

$$= 12(38)$$

$$= 456 \text{ cm}^2$$

$$25^2 = 7^2 + h^2$$

$$625 = 49 + h^2$$

$$576 = h^2$$

$$h = 24$$

7. The area of trapezoid is 108 cm^2 . One base is 7 cm, and the height is 12 cm. Find the length of the second base.

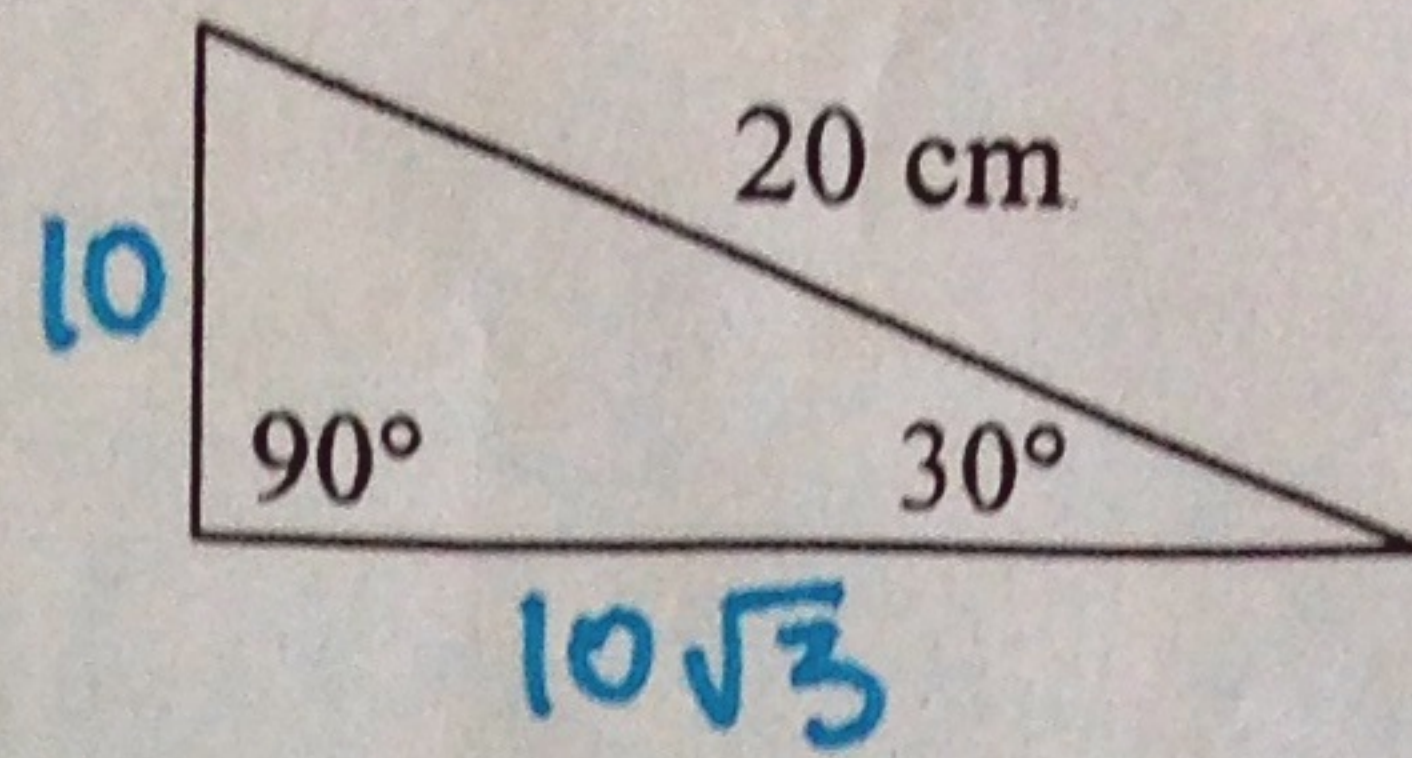
$$108 = \frac{1}{2}(12)(b_1 + 7)$$

$$\frac{108}{6} = \frac{1}{2}(b_1 + 7)$$

$$18 = b_1 + 7$$

$$11 = b_1$$

8. Find the area.



$$\frac{10(10\sqrt{3})}{2} = 50\sqrt{3}$$

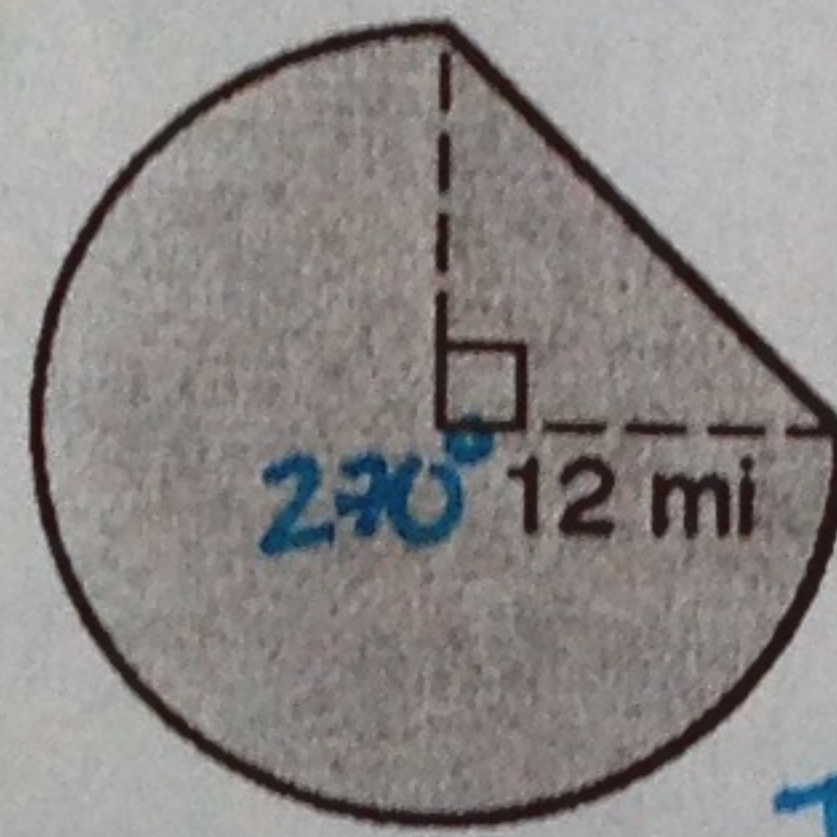
9. The circumference of a circle is 40π inches. Find the area of this circle.

$$40\pi = 2\pi r$$

$$20 = r$$

$$A = 20^2 \pi = 400\pi$$

10. Find the area of the composite figure. Use $\pi \approx 3.14$ and round to the nearest tenth.



$$A_{\Delta} + A_{\Delta}$$

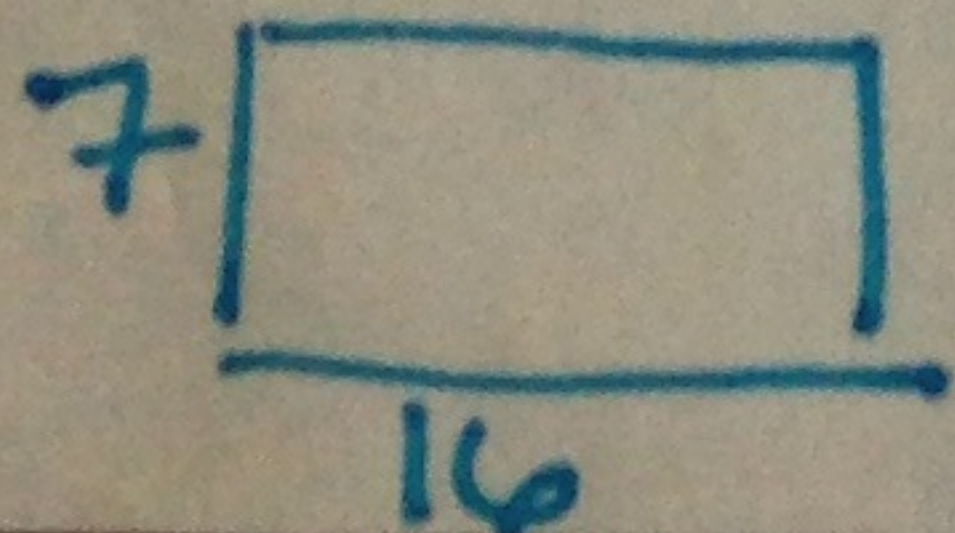
$$\pi r^2 \left(\frac{270}{360} \right) + \frac{1}{2}bh$$

$$\pi 12^2 \left(\frac{270}{360} \right) + \frac{1}{2}(12)(12)$$

$$\pi 144 \left(\frac{3}{4} \right) + 6(12)$$

$$108\pi \approx 339.12 + 72 = 411.12 \text{ mi}^2$$

11. A rectangle has base 16 cm and height 7 cm. What is the effect on the area if the base and height are both tripled?



Area is mult by 3^2 or 9

12. A circle has radius 2 feet. What is the effect on the area if the radius is tripled?

Area is mult by 3^2 or 9.

rectangle $A = bh$

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

parallelogram $A = bh$

rhombus $A = \frac{d_1 \cdot d_2}{2}$

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

circle $A = \pi r^2$, $C = 2\pi r$ or πd

regular polygon $A = \frac{1}{2}pa$

