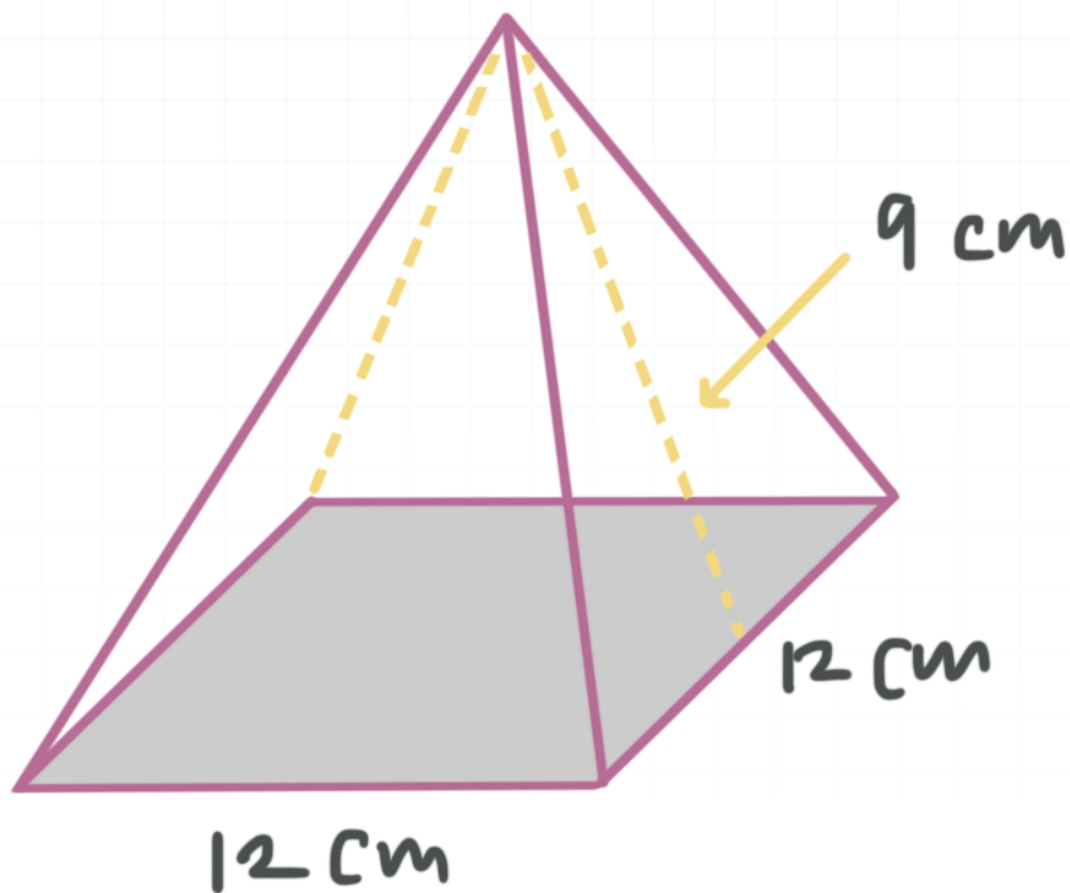


**Topic:** Nets/volume/surface area of pyramids

**Question:** What is the surface area of a square pyramid with a base of 12 cm by 12 cm and a lateral height of 9 cm?

**Answer choices:**

- A      $216 \text{ cm}^2$
- B      $360 \text{ cm}^2$
- C      $442 \text{ cm}^2$
- D      $576 \text{ cm}^2$



**Solution: B**

Plugging the dimensions we've been given into the formula for the surface area of a pyramid, we get

$$S = \frac{1}{2}lp + B$$

$$S = \frac{1}{2}(9 \text{ cm})(4 \cdot 12 \text{ cm}) + (12 \text{ cm})^2$$

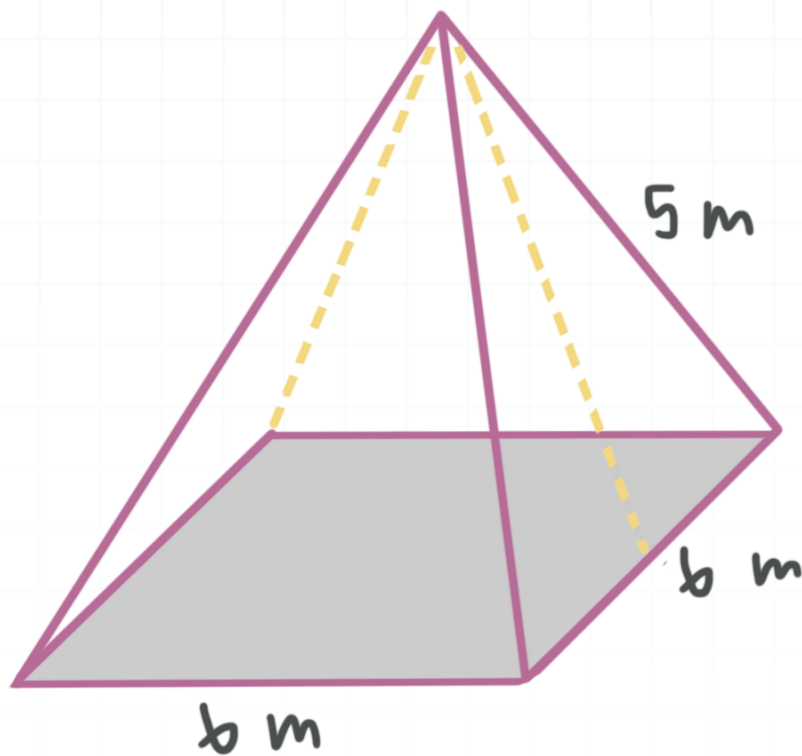
$$S = 216 \text{ cm}^2 + 144 \text{ cm}^2$$

$$S = 360 \text{ cm}^2$$



**Topic:** Nets/volume/surface area of pyramids

**Question:** What is the surface area of a square pyramid with a base of 6 m by 6 m if the length of an edge of the pyramid is 5 m?

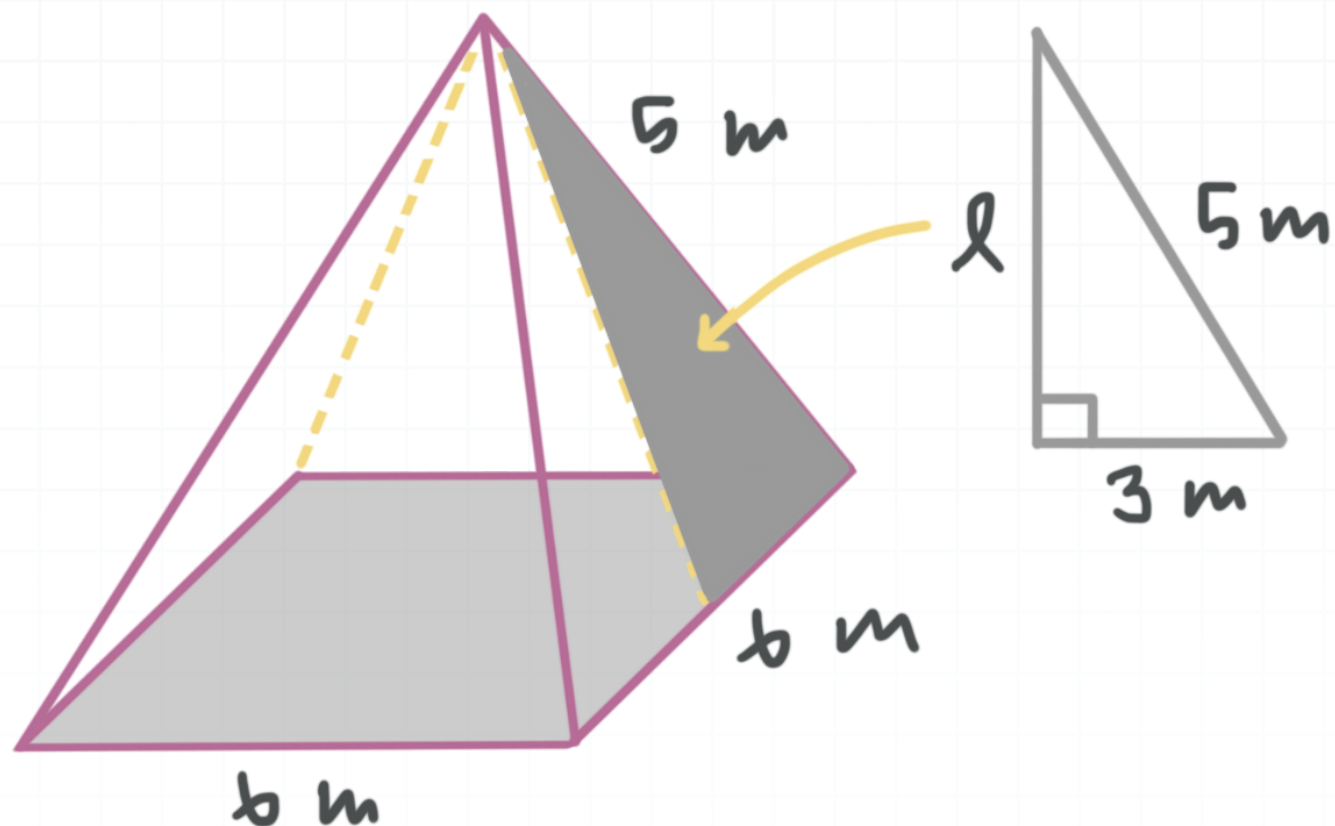
**Answer choices:**

- A      $84 \text{ m}^2$
- B      $96 \text{ m}^2$
- C      $114 \text{ m}^2$
- D      $132 \text{ m}^2$



**Solution: A**

First, find  $l$  by using the shaded triangle,



with the Pythagorean theorem.

$$(3\text{ m})^2 + l^2 = (5\text{ m})^2$$

$$9\text{ m}^2 + l^2 = 25\text{ m}^2$$

$$l^2 = 16\text{ m}^2$$

$$l = 4\text{ m}$$

Now use the formula for surface area of a pyramid.

$$S = \frac{1}{2}lp + B$$

$$S = \frac{1}{2}(4\text{ m})(4 \cdot 6\text{ m}) + (6\text{ m})^2$$



$$S = \frac{1}{2}(4 \text{ m})(24 \text{ m}) + (6 \text{ m})^2$$

$$S = 48 \text{ m}^2 + 36 \text{ m}^2$$

$$S = 84 \text{ m}^2$$



**Topic:** Nets/volume/surface area of pyramids

**Question:** A rectangular pyramid has a height of 6, and a base with length 8 and unknown width. If the pyramid's volume is 32, what is the width of the base?

**Answer choices:**

- A      2
- B      3
- C      4
- D      5



**Solution: A**

Because  $B = lw$ , where  $l$  and  $w$  are the length and width of the base, we can rewrite the volume formula

$$V = \frac{1}{3}Bh$$

as

$$V = \frac{1}{3}lwh$$

Substituting for  $V$ ,  $l$ , and  $h$ , we get

$$32 = \frac{1}{3} \cdot 8 \cdot w \cdot 6$$

$$32 = 16w$$

$$w = 2$$

