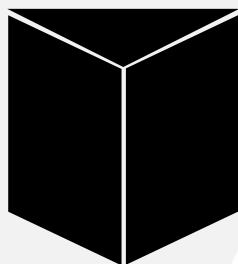# 48. How to find the volume of a triangular prism

Scenario Questions:

1. Anna's fish tank is in the shape of a triangular prism and has a volume of 100 litres. If the tank is 2 meters tall, what is the area of the triangular base?
(1 litre = 1000cm³)

2. Sarah is building a swimming pool with a triangular prism shape. The pool has a volume of 500 cubic meters, and she wants it to be 5 meters wide. What is the area of the triangular cross section of the pool?
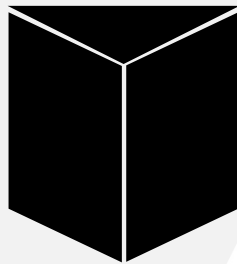
crackmaths

Scenario Questions:

3. David is packing socks into a triangular prism-shaped net to hang in his wardrobe. The net has a height of 120 centimeters. If it has a volume of 6,000 cubic centimeters, what must be the area of the triangular base be?

4. Lisa is planning to pour a concrete slab for a patio in the shape of a triangular prism. If the area of the slab 1.5 square meters and the depth is 10cm, what is the volume of the concrete?
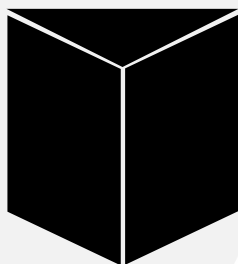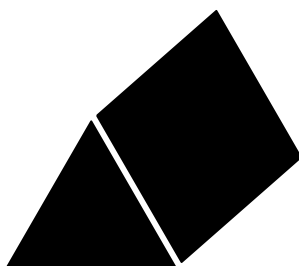
Scenario Questions:

5. Mark has bought a fish tank in the shape of a triangular prism.`For the number of fish he has he needs to fill it with with 80 litres. Given the base of the tank has an area of 320cm² and If the tank has a height of 1.5m, is the tank large enough?

6. Emily is constructing an ice sculpture in the shape of a triangular prism. She wants the sculpture to have a volume of 500cm³, with the triangle having a height of 10cm and base of 10cm. How long should she make the prism?
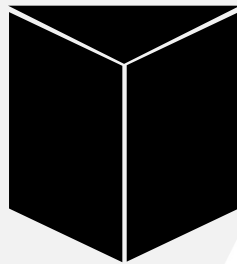
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Scenario Questions:

7. Jack is making homemade candles using a mould in the shape of a triangular prism. He wants each candle to have a volume of 300 millilitres. If the triangle has base 5 cm and height 6 cm, what should be the height of each candle?

8. Sophia is building the casing for a concrete ramp. The triangular cross section has height 20cm and length 2m. The depth of the prism is 1.5m. How many litres of concrete does she need?
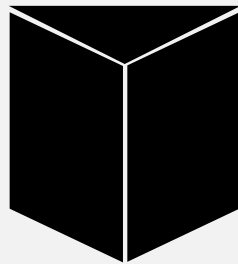
Scenario Questions:

9. Michael is building a birdhouse in the shape of a triangular prism. The birdhouse has a volume of 150 cubic inches and a height of 5 inches. What is the area of the triangular base?

10. Rebecca is making tiles. She has a cuboid block of clay with length 10cm, width 20cm and height 10cm. Her tile design is triangular prism. The cross section has base 5cm and height 4cm, the depth is 2cm. How many tiles can she make?
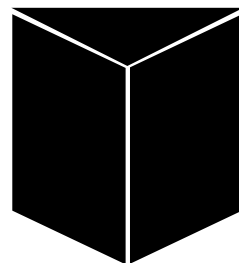
48. How to find the volume of a triangular prism

Scenario Questions: **Answers**

1. Anna's fish tank is in the shape of a triangular prism and has a volume of 100 litres. If the tank is 2 meters long, what is the area of the triangular base?
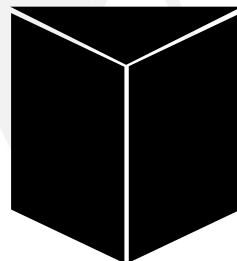
(1 litre = 1000cm³)

1. Area of the triangle: 500 cm²

2. Sarah is building a swimming pool with a triangular prism shape. The pool has a volume of 500 cubic meters, and she wants it to be 5 meters wide. What is the area of the triangular cross section of the pool?

2. Area of cross section: 100 square meters

3. David is packing socks into a triangular prism-shaped net to hang in his wardrobe. The net has a height of 120 centimeters. If it has a volume of 6,000 cubic centimeters, what must be the area of the triangular base be?
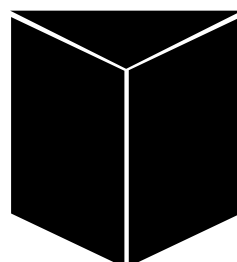

3. Area of triangular base: 50 cm²

4. Lisa is planning to pour a concrete slab for a patio in the shape of a triangular prism. If the area of the slab 1.5 square meters and the depth is 10cm, what is the volume of the concrete?

4. Volume of the slab = 0.15 m³

5. Mark has bought a fish tank in the shape of a triangular prism.`For the number of fish he has he needs to fill it with with 80 litres. Given the base of the tank has an area of 320 cm² and If the tank has a height of 1.5 meters, is the tank large enough?
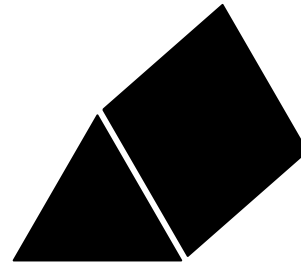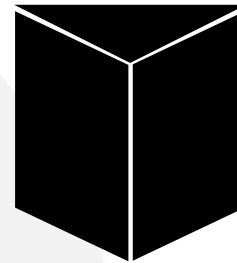

5. No, the volume of the tank is only 48 litres

Scenario Questions: Answers

6. Emily is constructing an ice sculpture in the shape of a triangular prism. She wants the sculpture to have a volume of 500 cubic centimeters, with the triangle having a height of 10 centimeters and base of 10 centimeters. How long should she make the prism?

6. The prism should be 10 cm long.

7. Jack is making homemade candles using a mould in the shape of a triangular prism. He wants each candle to have a volume of 300 millilitres. If the triangle has base 5 cm and height 6 cm, what should be the height of each candle?
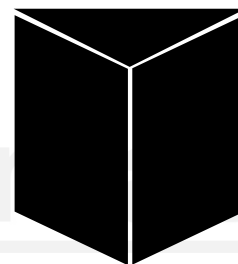

7. The candle should be 20 cm high.

8. Sophia is building the casing for a concrete ramp. The triangular cross section has height 20 cm and length 2 m. If the depth of the prism is 1.5m. How many litres of concrete does she need to order?

(1 litre = 1000 cm³)

8. She will need 300 litres (300,000 cm³)

9. Michael is building a birdhouse in the shape of a triangular prism. The birdhouse has a volume of 150 cubic inches and a height of 5 inches. What is the area of the triangular base?

9. The of the base is 30 square inches.

10. Rebecca is making some triangular tiles. She has a block of clay with length 10 cm, width 20 cm and depth 10 cm. If her tile design takes the shape of a triangular prism of depth 2 cm and a triangular cross section with of base 5 cm and height 4 cm. How many tiles should she be able to make?

10. Volume of clay = 2,000 cm³, Volume of tile = 20 cm³, total tiles = 100 tiles.