

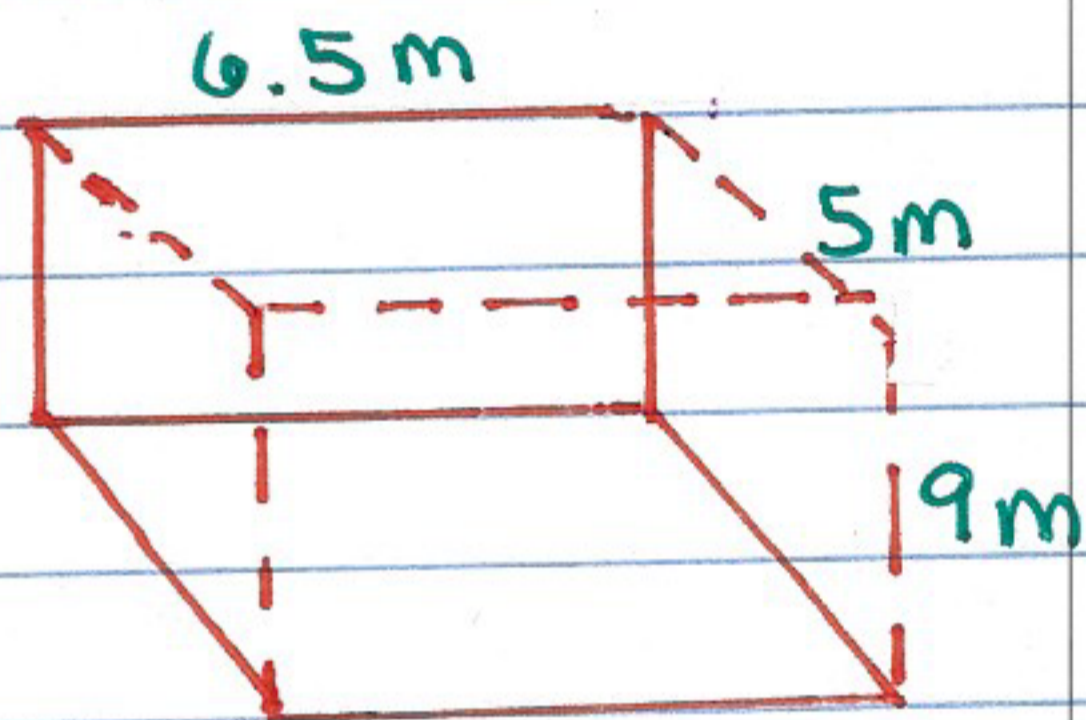
14.4 Volume of Prisms p. 610

The volume of a 3-dimensional figure is a measure of the amount of space that it occupies. Volume is measured in cubic units (the exponent is a 3) such as in in^3 or ft^3 .

$$V = BH$$

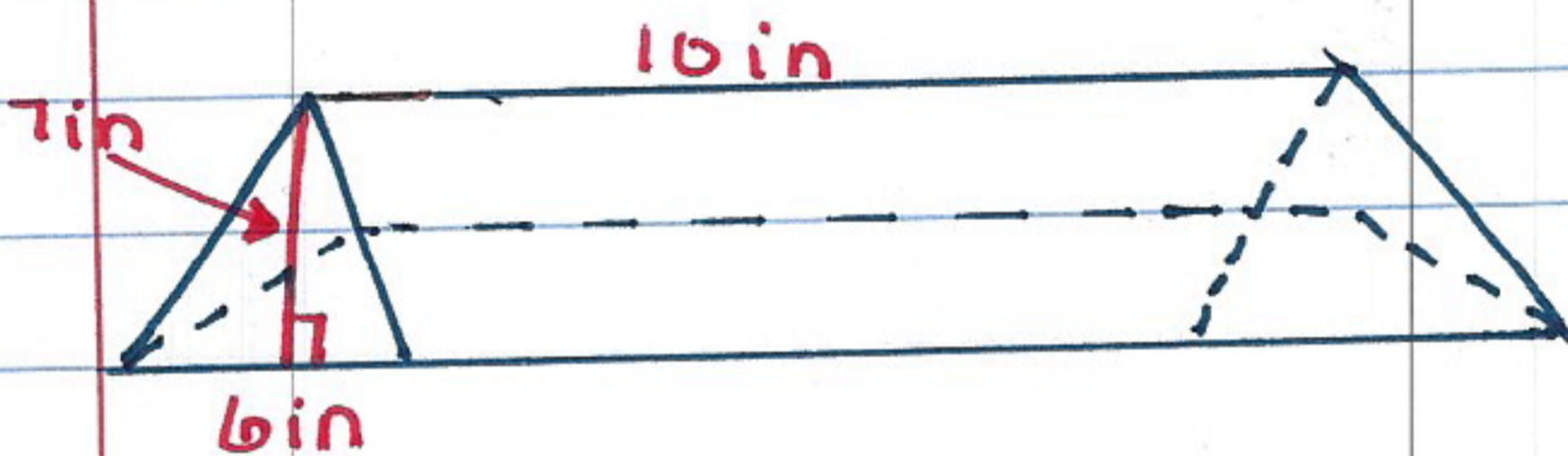
↳ height of the prism
↳ area of 1 base

① The volume of a rectangular prism: lwh



$$V = lwh$$
$$V = (6.5)(5)(9)$$
$$V = 292.5 \text{ m}^3$$

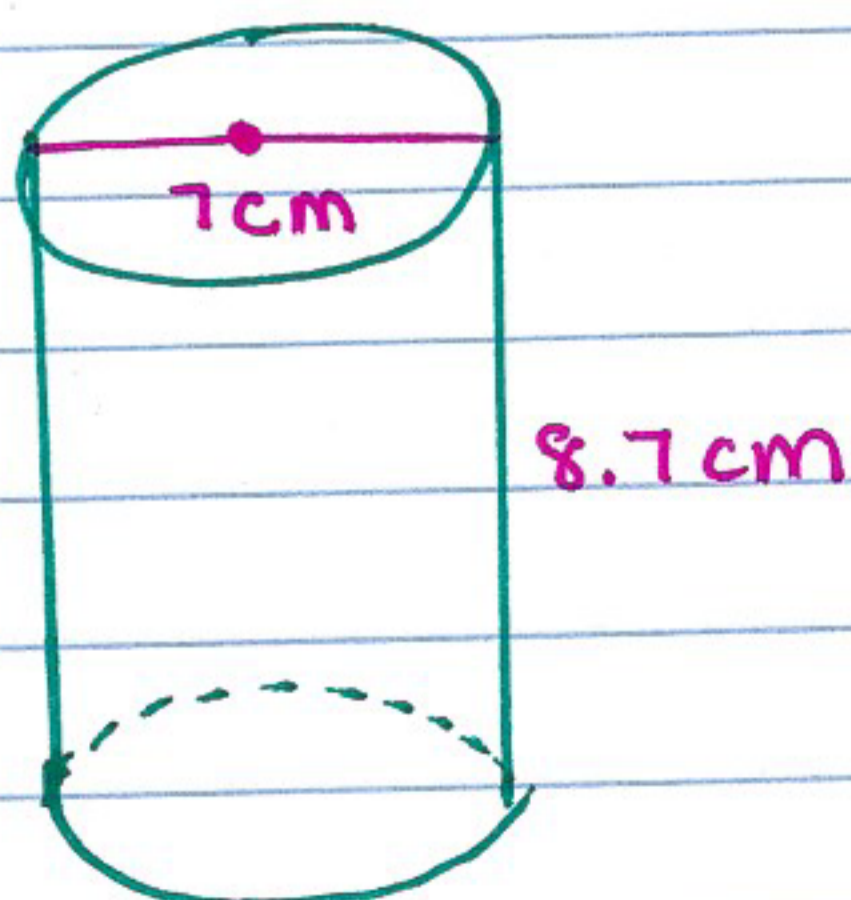
② The volume of a triangular prism is: $\frac{bh}{2}H$



$$V = \frac{bh}{2}H$$
$$V = \frac{6(7)}{2}(10)$$

$$V = 21(10)$$
$$V = 210 \text{ in}^3$$

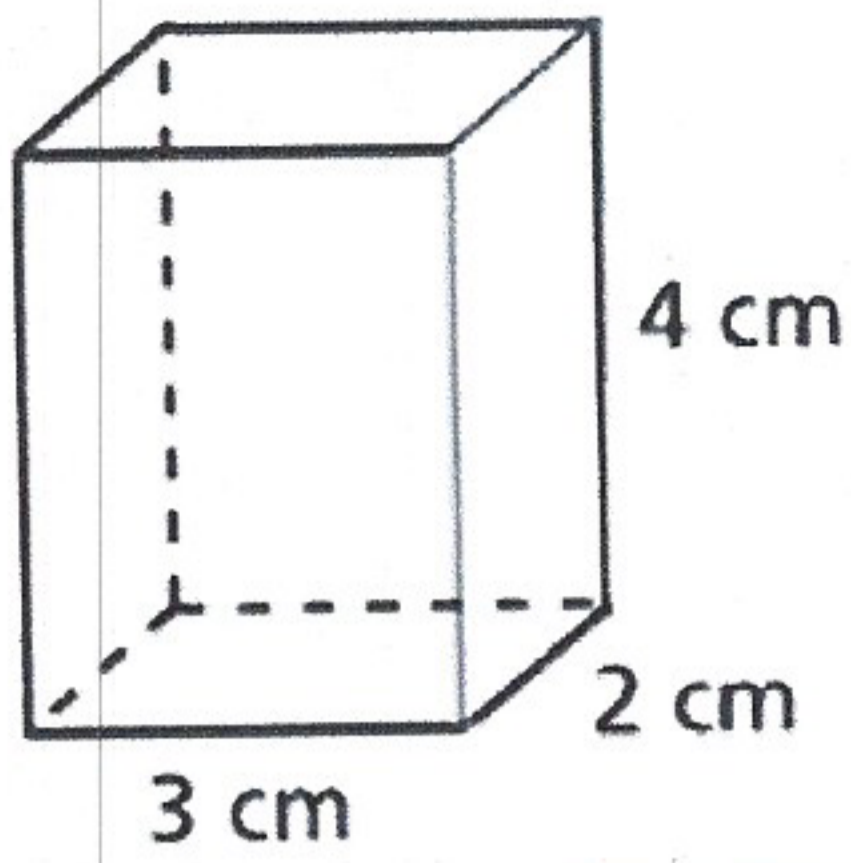
③ The volume of a cylinder is: $\pi r^2 H$



$$V = \pi r^2 H$$
$$V = (3.14)(3.5)^2(8.7)$$
$$V = 3.14(12.25)(8.7)$$
$$V = 334.6455 \text{ cm}^3$$

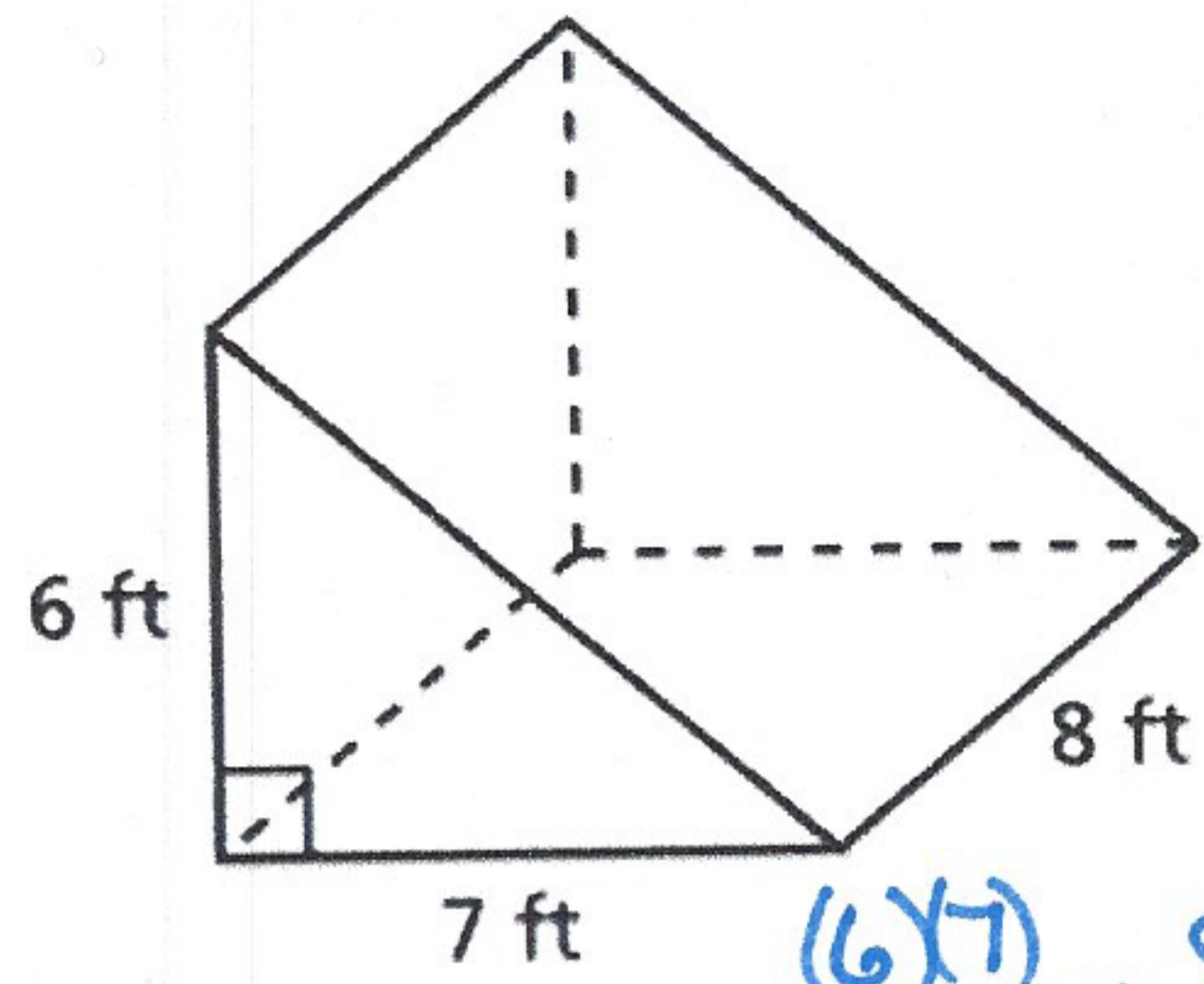
Find the volume of the prism.

1.



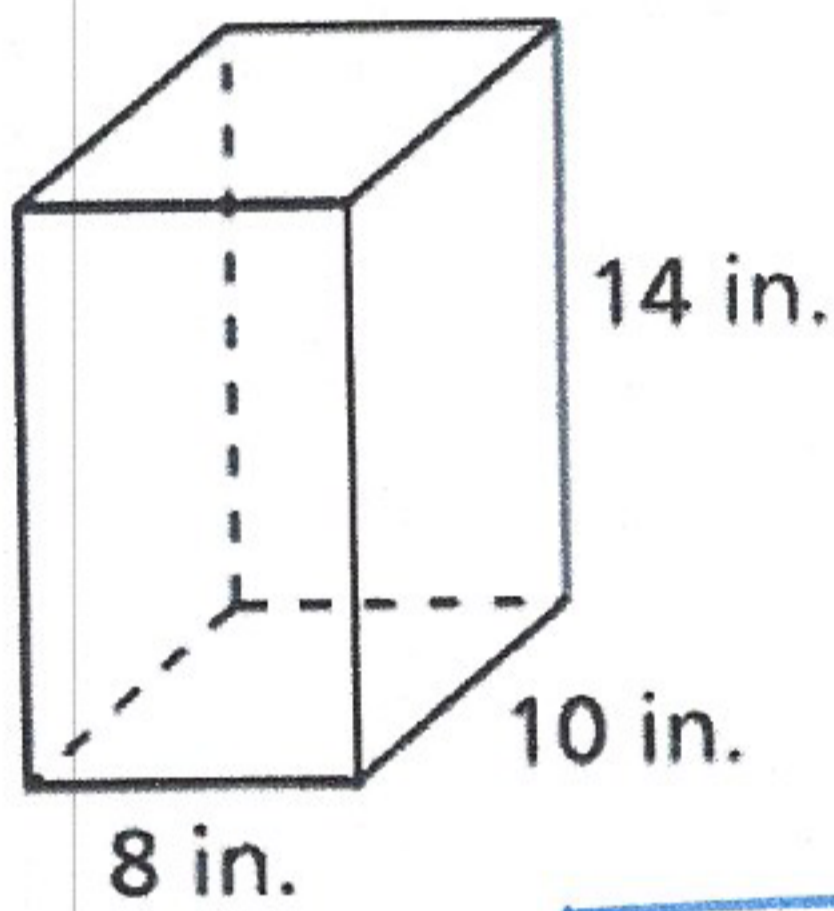
$$2 \cdot 3 \cdot 4 = \boxed{24 \text{ cm}^3}$$

2.



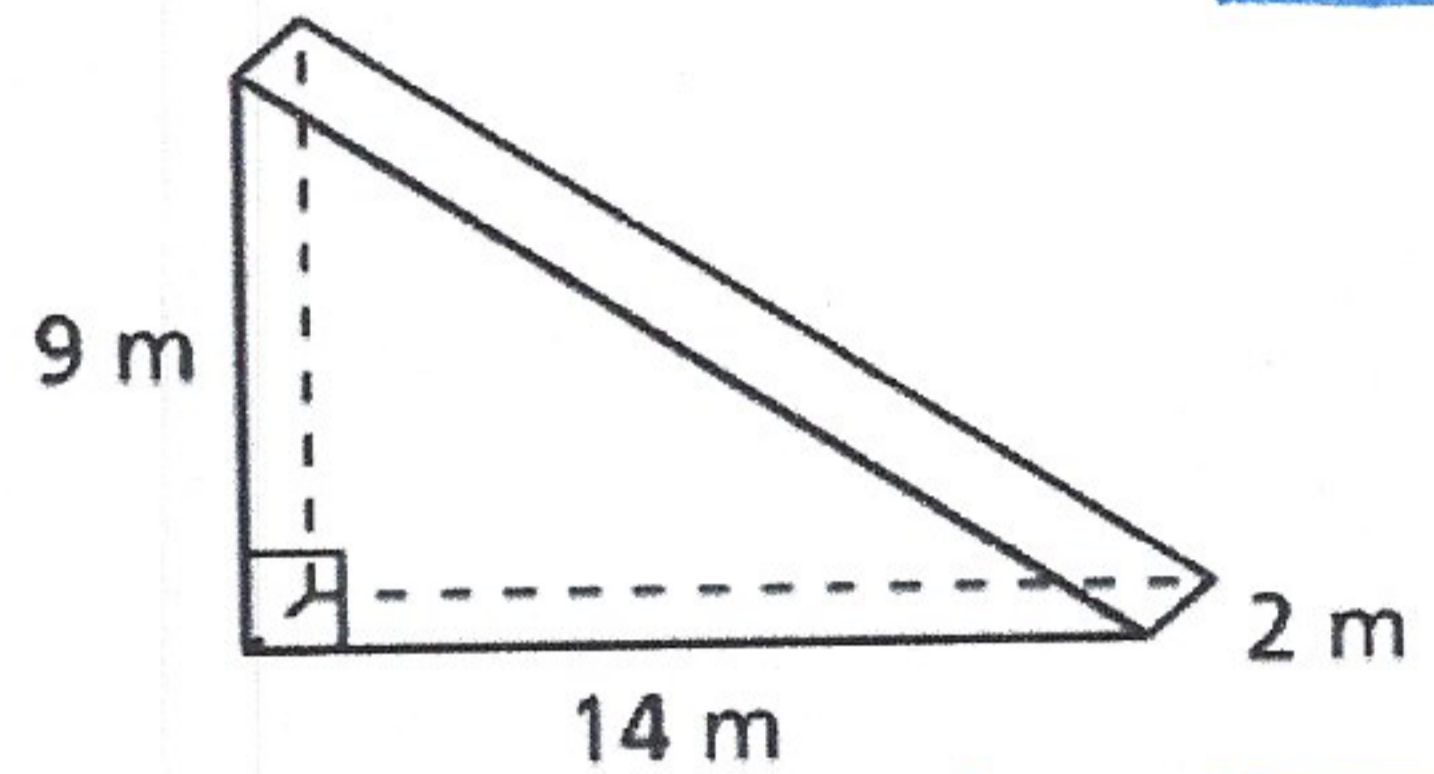
$$\frac{(6)(7)}{2} \cdot 8 = \boxed{168 \text{ ft}^3}$$

3.



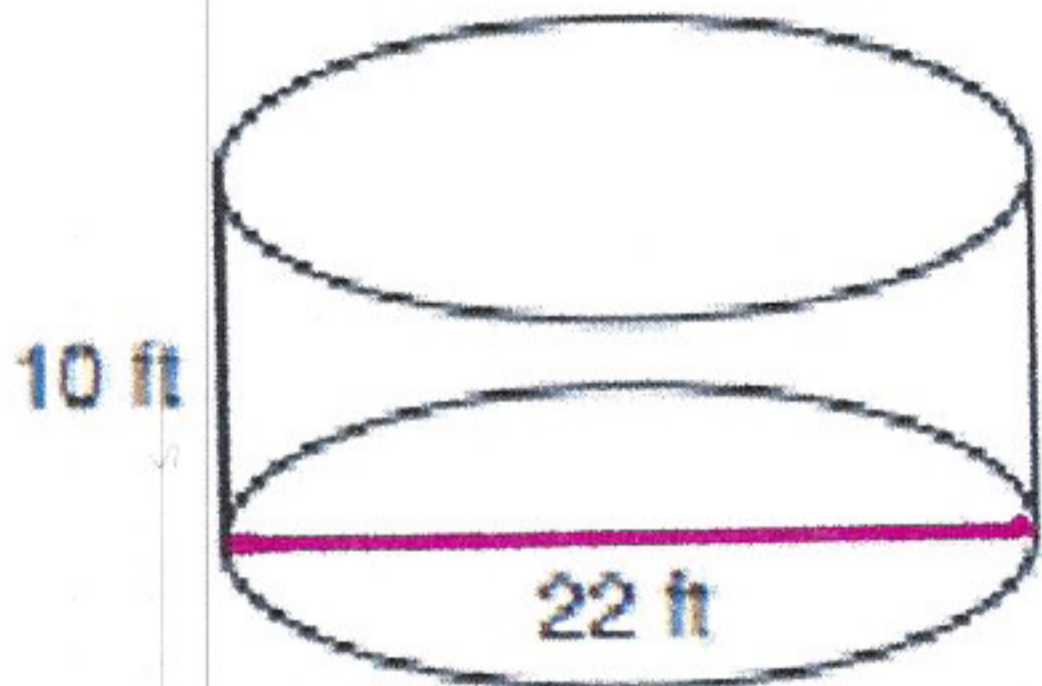
$$8 \cdot 10 \cdot 14 = \boxed{1120 \text{ in}^3}$$

4.



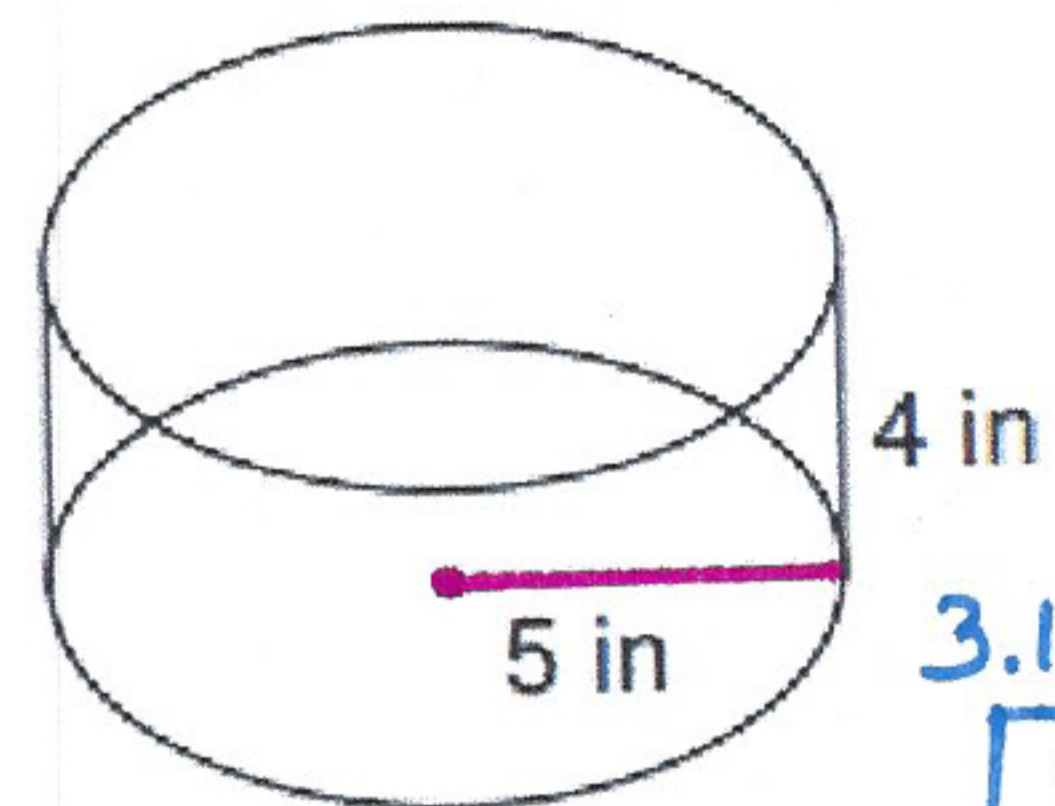
$$2 \left(\frac{(9)(14)}{2} \right) = \boxed{126 \text{ m}^3}$$

5.



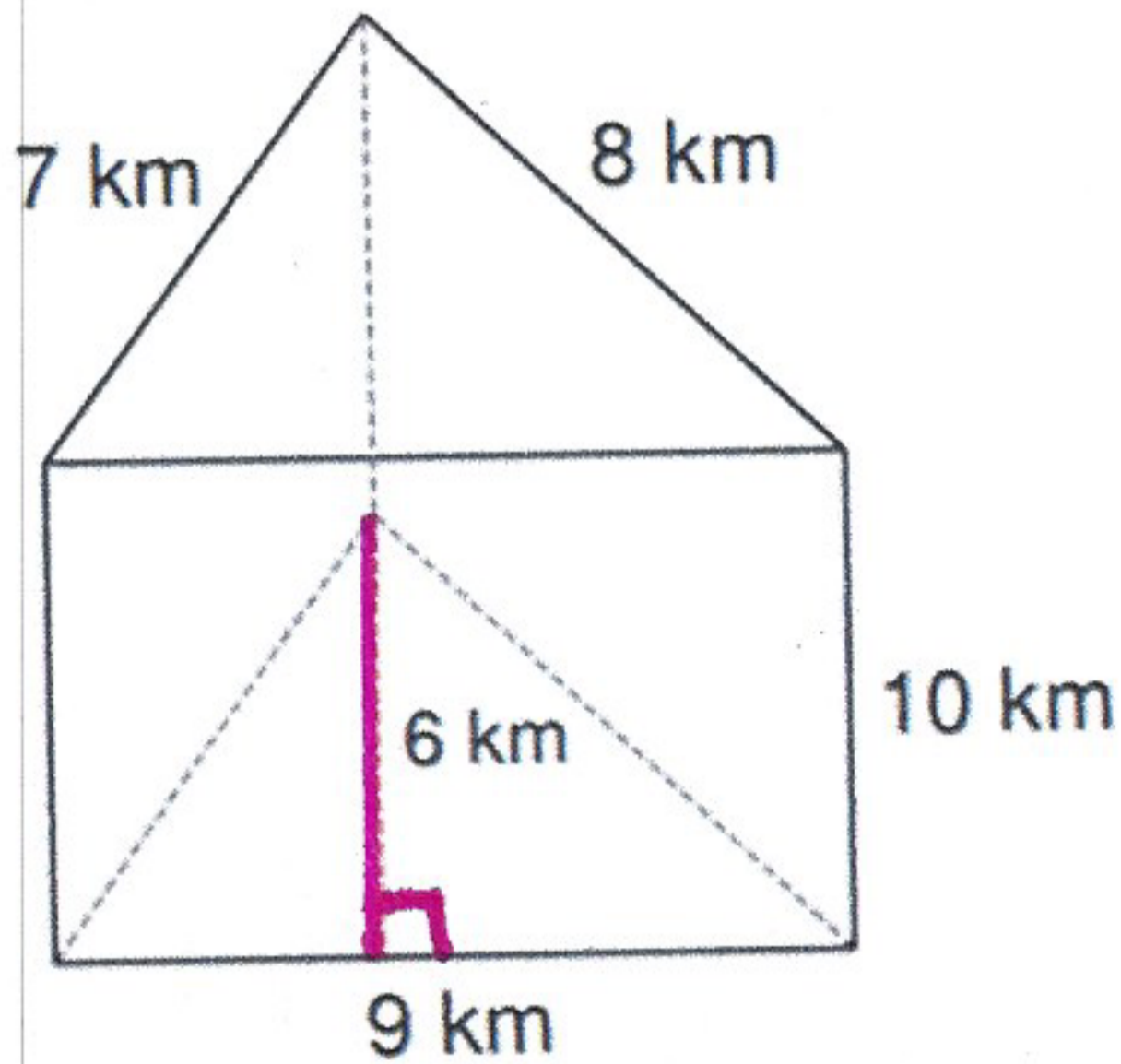
$$3.14(11)^2 \cdot 10 = \boxed{3799.4 \text{ ft}^3}$$

6.



$$3.14(5)^2 \cdot 4 = \boxed{314 \text{ in}^3}$$

7.



$$\left(\frac{(6)(9)}{2} \right) 10 = \boxed{270 \text{ km}^3}$$