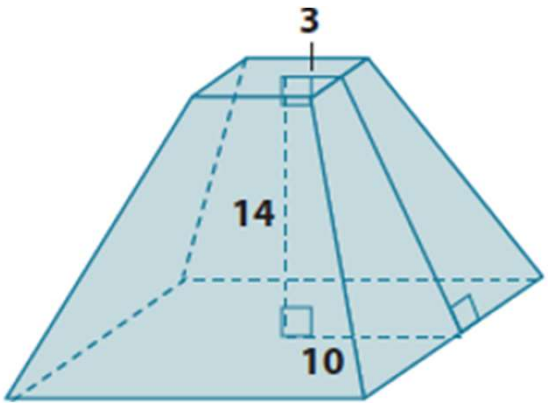
Volume of Truncated Cone

Find the volume of the truncated pyramid with a square base.



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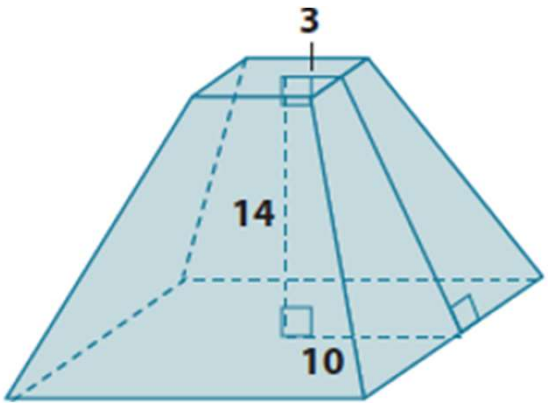

Let x represent the height of the small pyramid.

$$\frac{3}{10} = \frac{x}{x+14}$$
$$3(x+14) = 10x$$
$$3x + 42 = 10x$$
$$42 = 7x$$
$$6 = x$$

The volume of the small pyramid is

$$V = \frac{1}{3}(36)(6)$$
$$= \frac{216}{3}.$$

The volume of the large pyramid is

$$V = \frac{1}{3}(400)(20)$$
$$= \frac{8000}{3}.$$

The volume of the truncated pyramid is

$$\frac{8000}{3} - \frac{216}{3} = \frac{7784}{3}.$$

The volume of the truncated pyramid is $\frac{7,784}{3}\ units^3$.

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