



# How Do You Find the Volume of a Triangular Pyramid?

Find the volume of the triangular pyramid in the diagram.



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## SUMMARY

B stands for the area of the base

The base is a triangle

The area of a triangle is  $(1/2)bh$ , where  $b$  is the base of the triangle and  $h$  is the height of the triangle

$h_1$  is the height of the triangle base and  $h_2$  is the height of the pyramid

**Find the Volume:**

$V = \frac{1}{3} Bh$   
 $B = \frac{1}{2} bh$   
 $V = \frac{1}{3} (\frac{1}{2} bh_1) h_2 = \frac{1}{3} (\frac{1}{2} (10 \cdot 4)) 6 = \frac{1}{3} (\frac{1}{2} (40)) 6$   
 $V = \frac{1}{3} (20) 6 = \frac{1}{3} (120) = \frac{120}{3} = 40 \text{ cm}^3$

## NOTES

**Step 1)** Write the formula for the volume of a pyramid

The volume of a pyramid is  $(1/3)Bh$ , where  $B$  is the area of the base and  $h$  is the height of the pyramid

The base of the pyramid is a triangle

**Step 2)** Identify the variables

$b$ , the base of the triangle, is 10 cm

$h_1$ , the height of the triangle, is 4 cm

$h_2$ , the height of the pyramid, is 6 cm

**Step 3)** Plug in the variables

**Step 4)** Solve for volume

We'll have to use the order of operations to find the volume

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- Multiply  $10 \cdot 4$  to get 40
  - Multiply  $\frac{1}{2} \cdot 40$  to get 20
  - Multiply  $20 \cdot 6$  to get 120
  - Multiply  $\frac{1}{3} \cdot 120$  to get  $\frac{120}{3}$
  - Dividing  $\frac{120}{3}$  gives us 40

We'll have to use the order of operations to find the volume

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We start with the inner most parentheses and work our way out

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Multiplying by one third is the same as dividing by 3