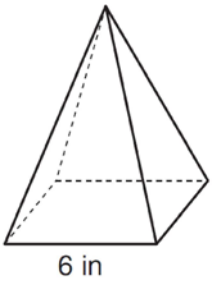
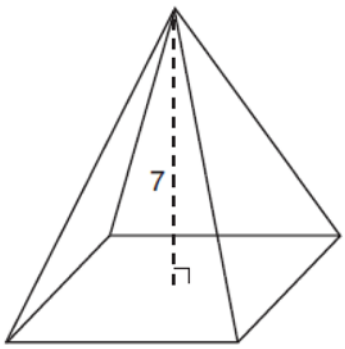
G.GMD.A.3: Volume 4

1 As shown in the diagram below, a regular pyramid has a square base whose side measures 6 inches.



If the altitude of the pyramid measures 12 inches, its volume, in cubic inches, is
1) 72
2) 144
3) 288
4) 432

2 The pyramid shown below has a square base, a height of 7, and a volume of 84.

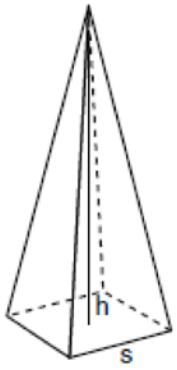


What is the length of the side of the base?
1) 6
2) 12
3) 18
4) 36

3 A regular pyramid has a height of 12 centimeters and a square base. If the volume of the pyramid is 256 cubic centimeters, how many centimeters are in the length of one side of its base?
1) 8
2) 16
3) 32
4) 64

4 The Great Pyramid of Giza was constructed as a regular pyramid with a square base. It was built with an approximate volume of 2,592,276 cubic meters and a height of 146.5 meters. What was the length of one side of its base, to the *nearest meter*?
1) 73
2) 77
3) 133
4) 230

5 A regular pyramid with a square base is shown in the diagram below.



A side, *s*, of the base of the pyramid is 12 meters, and the height, *h*, is 42 meters. What is the volume of the pyramid in cubic meters?

6 The base of a pyramid is a rectangle with a width of 6 cm and a length of 8 cm. Find, in centimeters, the height of the pyramid if the volume is 288 cm^3.

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Answer Section

1 ANS: 2

$V = \frac{1}{3} \cdot 6^2 \cdot 12 = 144$

REF: 011607geo

2 ANS: 1

$84 = \frac{1}{3} \cdot s^2 \cdot 7$

$6 = s$

REF: 061716geo

3 ANS: 1

$256 = \frac{1}{3} B \cdot 12$

$64 = B$

$8 = s$

REF: 081428ge

4 ANS: 4

$2592276 = \frac{1}{3} \cdot s^2 \cdot 146.5$

$230 \approx s$

REF: 081521geo

5 ANS:

2016. $V = \frac{1}{3} Bh = \frac{1}{3} s^2 h = \frac{1}{3} 12^2 \cdot 42 = 2016$

REF: 080930ge

6 ANS:

18. $V = \frac{1}{3} Bh = \frac{1}{3} lwh$

$288 = \frac{1}{3} \cdot 8 \cdot 6 \cdot h$

$288 = 16h$

$18 = h$

REF: 061034ge