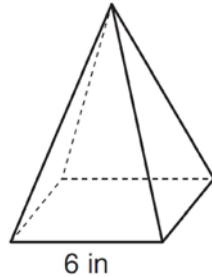


G.GMD.A.3: Volume 4

- 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

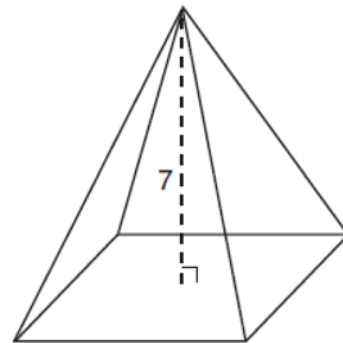
- 1) 72
2) 144
3) 288
4) 432
- 2 A regular pyramid has a square base. The perimeter of the base is 36 inches and the height of the pyramid is 15 inches. What is the volume of the pyramid in cubic inches?
1) 180
2) 405
3) 540
4) 1215
- 3 A tent is in the shape of a right pyramid with a square floor. The square floor has side lengths of 8 feet. If the height of the tent at its center is 6 feet, what is the volume of the tent, in cubic feet?
1) 48
2) 128
3) 192
4) 384
- 4 A child's tent can be modeled as a pyramid with a square base whose sides measure 60 inches and whose height measures 84 inches. What is the volume of the tent, to the *nearest cubic foot*?
1) 35
2) 58
3) 82
4) 175

- 5 The Pyramid of Memphis, in Tennessee, stands 107 yards tall and has a square base whose side is 197 yards long.



What is the volume of the Pyramid of Memphis, to the *nearest cubic yard*?

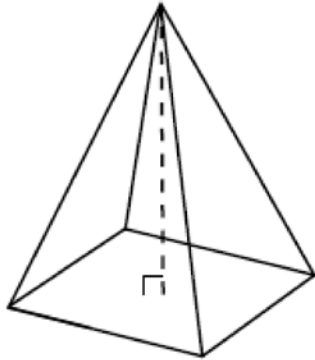
- 1) 751,818
2) 1,384,188
3) 2,076,212
4) 4,152,563
- 6 The pyramid shown below has a square base, a height of 7, and a volume of 84.



What is the length of the side of the base?

- 1) 6
2) 12
3) 18
4) 36

- 7 The square pyramid drawn below has a volume of 175.



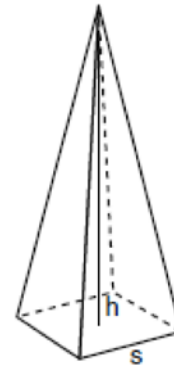
If the height of the pyramid is 21, what is the perimeter of the base?

- 1) 5
2) 10
3) 20
4) 25
- 8 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
- 9 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
- 10 The base of a pyramid is a rectangle with a width of 4.6 cm and a length of 9 cm. What is the height, in centimeters, of the pyramid if its volume is 82.8 cm^3 ?
- 1) 6
2) 2
3) 9
4) 18

- 11 What is the volume, in cubic centimeters, of a right square pyramid with base edges that are 64 cm long and a slant height of 40 cm?

- 1) 8192.0
2) $13,653.\bar{3}$
3) 32,768.0
4) $54,613.\bar{3}$

- 12 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?

- 13 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 .

G.GMD.A.3: Volume 4 Answer Section

1 ANS: 2

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

REF: 011607geo

2 ANS: 2

$$V = \frac{1}{3} \left(\frac{36}{4} \right)^2 \cdot 15 = 405$$

REF: 011822geo

3 ANS: 2

$$V = \frac{1}{3} (8)^2 \cdot 6 = 128$$

REF: 061906geo

4 ANS: 2

$$V = \frac{1}{3} \left(\frac{60}{12} \right)^2 \left(\frac{84}{12} \right) \approx 58$$

REF: 081819geo

5 ANS: 2

$$V = \frac{1}{3} \cdot 197^2 \cdot 107 = 1,384,188$$

REF: 082208geo

6 ANS: 1

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

$$6 = s$$

REF: 061716geo

7 ANS: 3

$$175 = \frac{1}{3} \cdot s^2 \cdot 21 \quad 5 \times 4 = 20$$

$$25 = s^2$$

$$5 = s$$

REF: 012516geo

8 ANS: 1

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

$$64 = B$$

$$8 = s$$

REF: 081428ge

9 ANS: 4

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

$$230 \approx s$$

REF: 081521geo

10 ANS: 1

$$82.8 = \frac{1}{3}(4.6)(9)h$$

$$h = 6$$

REF: 061810geo

11 ANS: 3

$$\sqrt{40^2 - \left(\frac{64}{2}\right)^2} = 24 \quad V = \frac{1}{3}(64)^2 \cdot 24 = 32768$$

REF: 081921geo

12 ANS:

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

REF: 080930ge

13 ANS:

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

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

$$288 = 16h$$

$$18 = h$$

REF: 061034ge