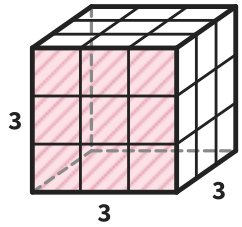
# Cubes and cube roots

ANSWERS

**1**

Work out $3^3$




the same number, three times, multiplied

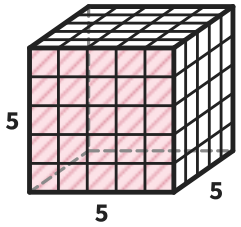
3 × 3 = 9 front layer

9 × 3 = 27 layers

**Answer** 27

**2**

Work out $5^3$




the same number, three times, multiplied

5 × 5 = 25 front layer

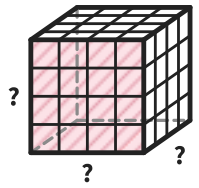
25 × 5 = 125 layers

**Answer** 125

**3**

Work out $\sqrt[3]{64}$

64 small cubes




which number, three times, makes 64?

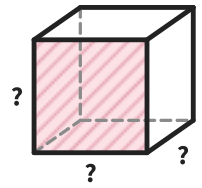
4 × 4 × 4 = 64

**Answer** 4

**4**

Work out $\sqrt[3]{1000}$

1000 small cubes




which number, three times, makes 1000?

10 × 10 × 10 = 1000

**Answer** 10

**5**

Work out $(-3)^3$

$(-3) \times (-3) \times (-3)$

−3 × −3 = 9

9 × −3 = −27

**Answer** −27

**6**

Work out $0.4^3$

$0.4 \times 0.4 \times 0.4$

$4^3 = 64$

1 + 1 + 1 = 3 decimal places

**Answer** 0.064

**7**

Work out $\sqrt[3]{-125}$

$? \times ? \times ? = -125$

−5 × −5 = 25, 25 × −5 = −125

**Answer** −5

**8**

Ravi says $6^3 = 18$. Explain Ravi's mistake. Then work out $6^3$.

Ravi did 6 × 3, not 6 × 6 × 6

6 × 6 = 36, 36 × 6 = 216

**Answer** 216

# Cubes and cube roots *further practice*

ANSWERS

**9**

Work out $(-4)^3$

$-4 \times -4 = 16$, $16 \times -4$

**Answer** $-64$

**10**

Circle the cube numbers.

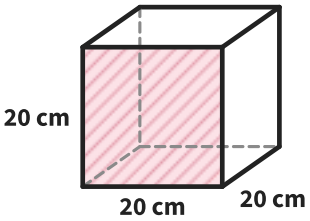
| | | | |
|---|---|---|---|
| 4 | 8 | 16 | 25 |
| 27 | 50 | 81 | 1000 |

$2^3 = 8$, $3^3 = 27$, $10^3 = 1000$

**Answer** 8, 27 and 1000

**11**

A plant pot is a cube with edges of 20 cm.
How much soil fills it? Give the units.

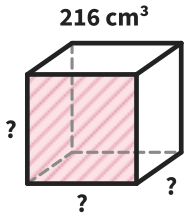



$20 \times 20 = 400$, $400 \times 20$

**Answer** $8000\ cm^3$

**12**

This cube has a volume of 216 $cm^3$.
How long is each edge?




$6 \times 6 \times 6 = 216$

**Answer** 6 cm

**13**

Which is bigger, $\sqrt[3]{27}$ or $\sqrt{16}$?
Show how you know.

$\sqrt[3]{27} = 3$, as $3 \times 3 \times 3 = 27$

$\sqrt{16} = 4$, as $4 \times 4 = 16$

**Answer** $\sqrt{16}$, as $4 > 3$

**14**

Work out $3^3 - 4^2$

$3^3 = 27$, $4^2 = 16$

$27 - 16$

**Answer** 11

**15**

Nina has 30 small cubes. She builds the biggest solid cube she can.
How many small cubes are left over?

$3^3 = 27$, $4^3 = 64$ is too many

$30 - 27$

**Answer** 3

**16**

Leo says, "When you cube a number, the answer is always bigger than the number." Is Leo right? Explain.

$0.5^3 = 0.125$, which is smaller than 0.5

$(-2)^3 = -8$, which is smaller than $-2$

**Answer** No