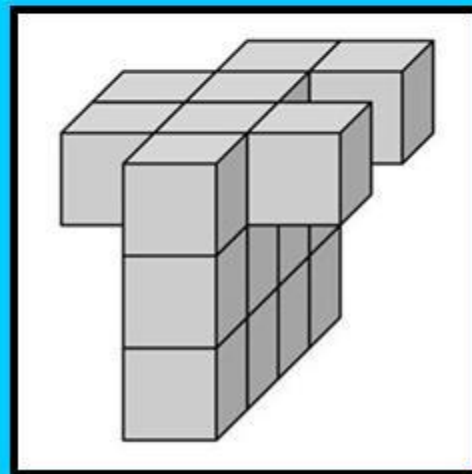
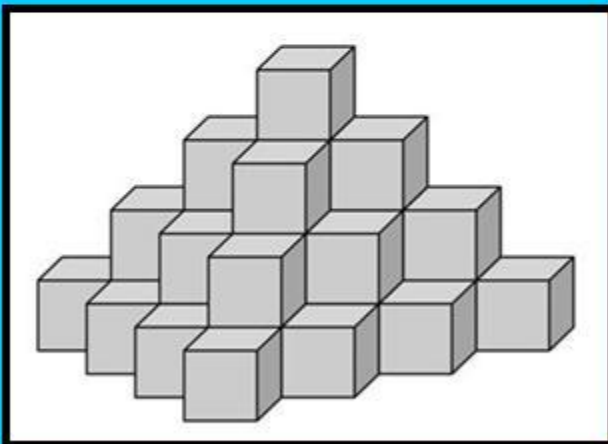
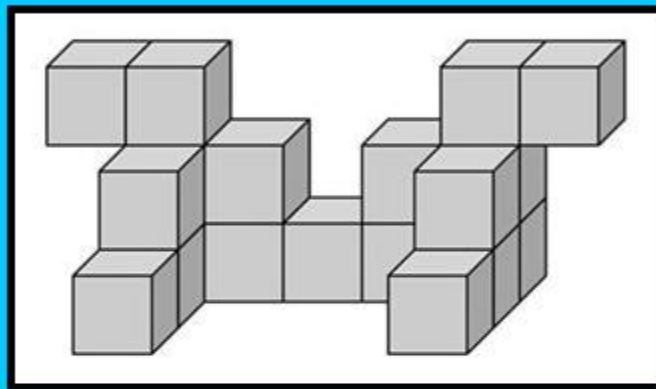


How many Cubes ?



How many circles?

Table of Contents

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Pages 3-5	Lesson plans (3 lessons)
Pages 6-30	Printables (25 reproducible activities)
Page 31	Answer key to 25 challenges
Page 32	Blank template for creating more problems



Lesson Plans

Structure: Each of these 25 challenges can be assigned as *independent* homework, but a few lessons should be taught in *whole-class* guided instruction so that students learn to look beyond the simplistic solutions.

Challenge # 1

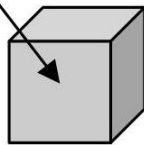
1st Hand out copies of today's activity.

2nd Explain this lesson's goal/objective: to determine how many cubes are there.

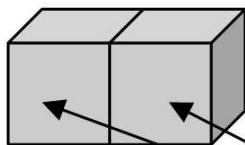
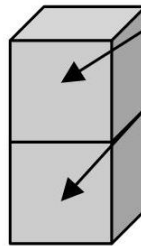
3rd Introduce the problem and explain how these lines create a design of cubes:

Demonstrate that there are five cubes

One solitary cube,
all alone,
by itself



Two cubes,
stacked.



Two cubes, side-by-side.

Answer: five cubes

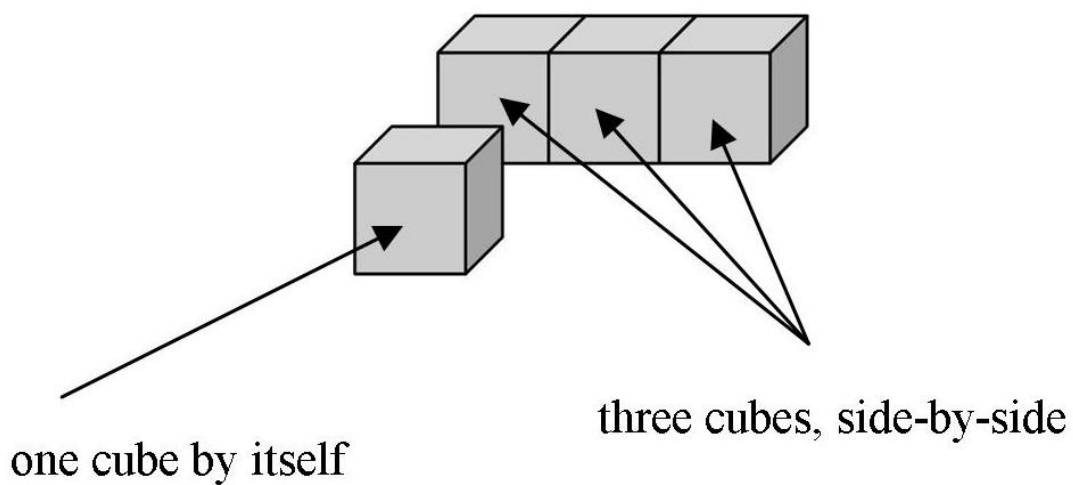
Challenge #2

1st Hand out copies of today's activity.

2nd Explain this lesson's goal/objective: to determine how many cubes are there.

3rd Introduce the problem and explain how these lines create a design of cubes:

Demonstrate that there are four cubes



Answer: four cubes

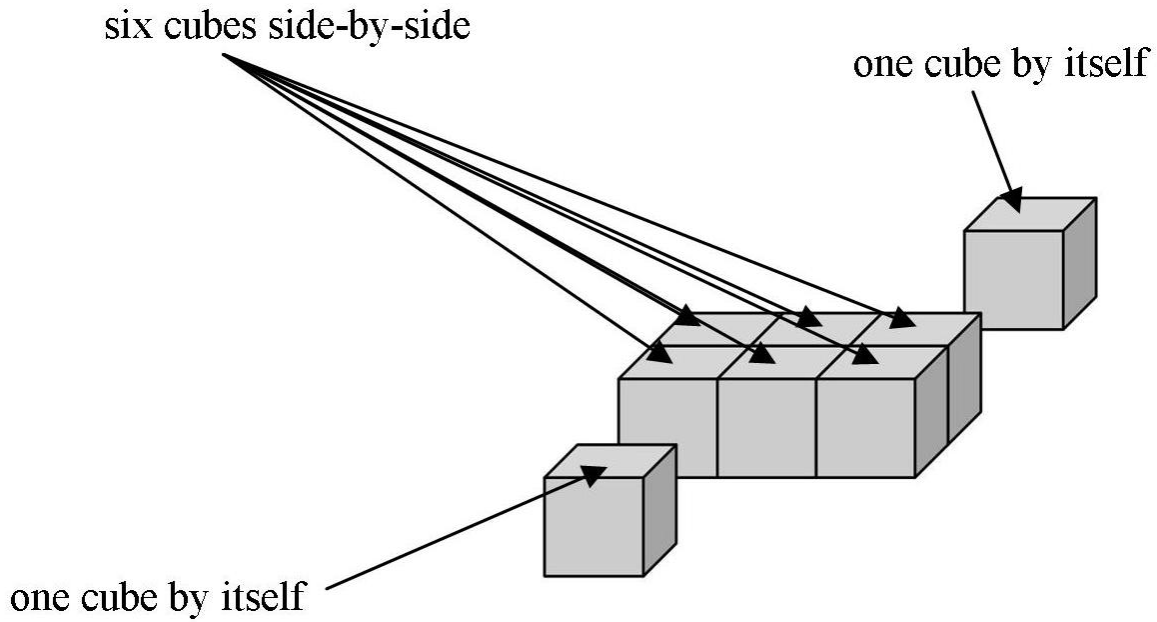
Challenge #3

1st Hand out copies of today's activity.

2nd Explain this lesson's goal/objective: to determine how many cubes are there.

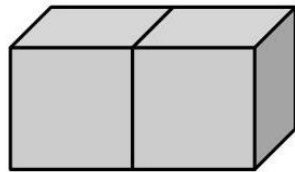
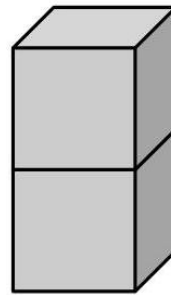
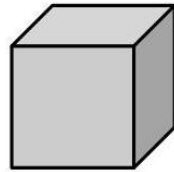
3rd Introduce the problem and explain how these lines create a design of cubes:

Demonstrate that there are eight cubes



Answer: eight cubes

How many Cubes

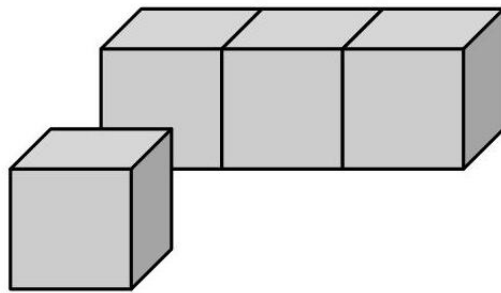


Challenge # 1

How many cubes?

- A) Three cubes
- B) Four cubes
- C) Five cubes
- D) Six cubes
- E) Seven cubes

How many Cubes

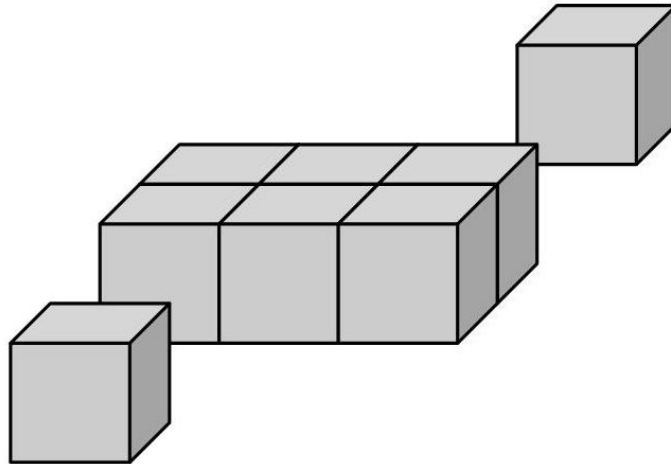


Challenge #2

How many cubes?

- A) Three cubes
- B) Four cubes
- C) Five cubes
- D) Six cubes
- E) Seven cubes

How many Cubes

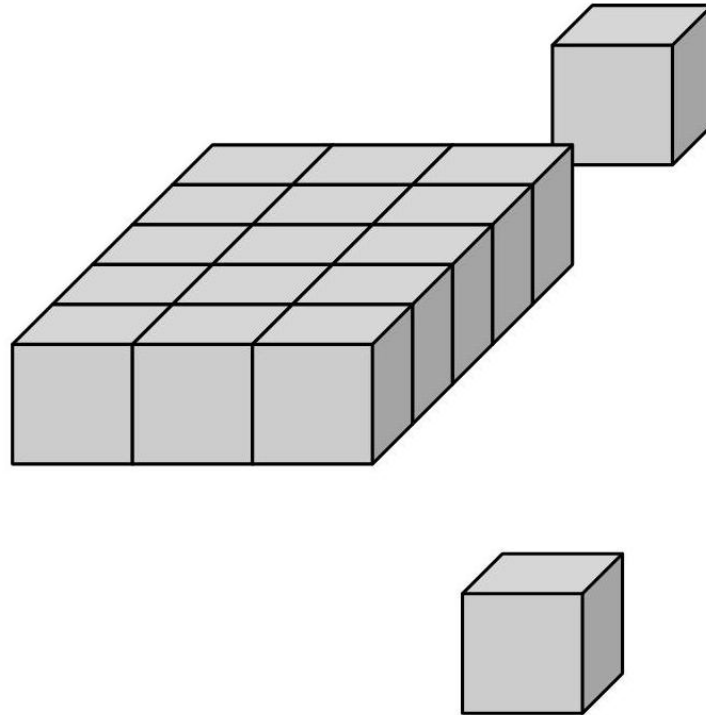


Challenge #3

How many cubes?

- A) Four cubes
- B) Five cubes
- C) Six cubes
- D) Seven cubes
- E) Eight cubes

How many Cubes

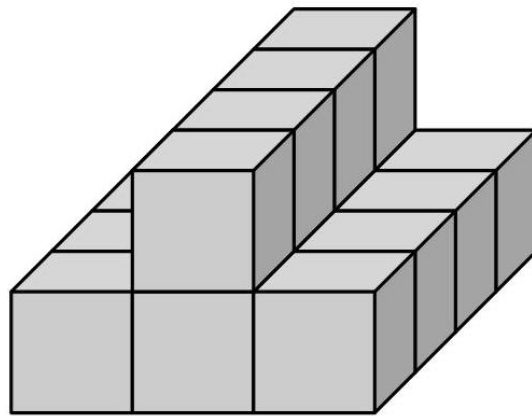


Challenge #4

How many cubes?

- A) Fifteen cubes
- B) Sixteen cubes
- C) Seventeen cubes
- D) Eighteen cubes
- E) Nineteen cubes

How many Cubes

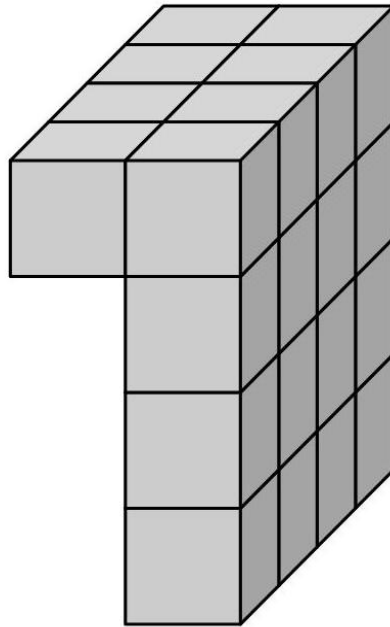


Challenge #5

How many cubes?

- A) Eight cubes
- B) Ten cubes
- C) Twelve cubes
- D) Fourteen cubes
- E) Sixteen cubes

How many Cubes

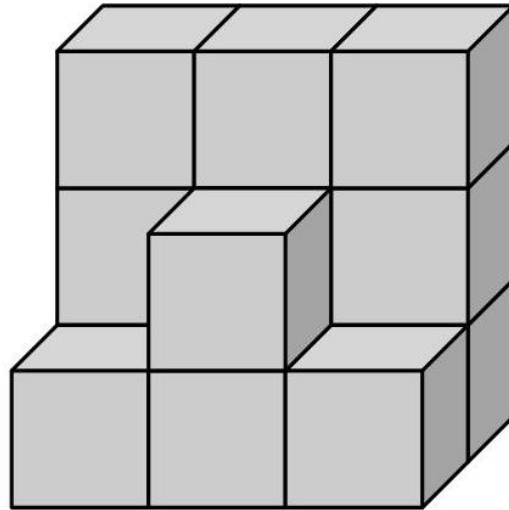


Challenge #6

How many cubes?

- A) Ten cubes
- B) Fifteen cubes
- C) Twenty cubes
- D) Twenty-five cubes
- E) Thirty cubes

How many Cubes

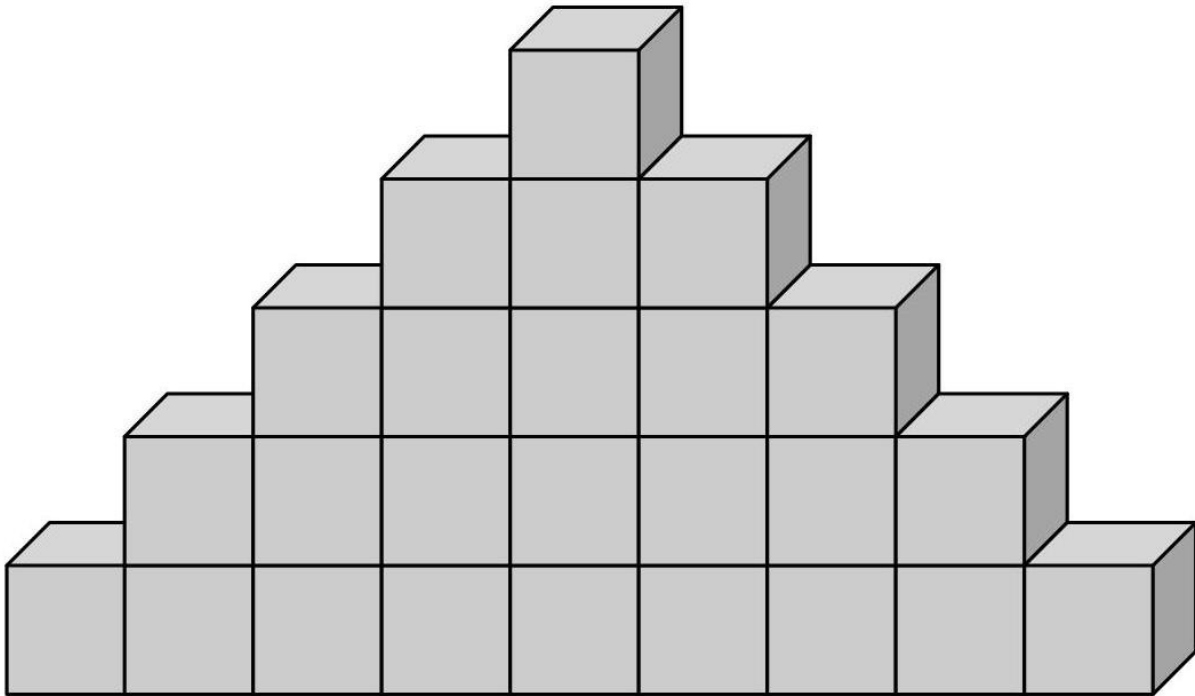


Challenge #7

How many cubes?

- A) Ten cubes
- B) Eleven cubes
- C) Twelve cubes
- D) Thirteen cubes
- E) Fourteen cubes

How many Cubes

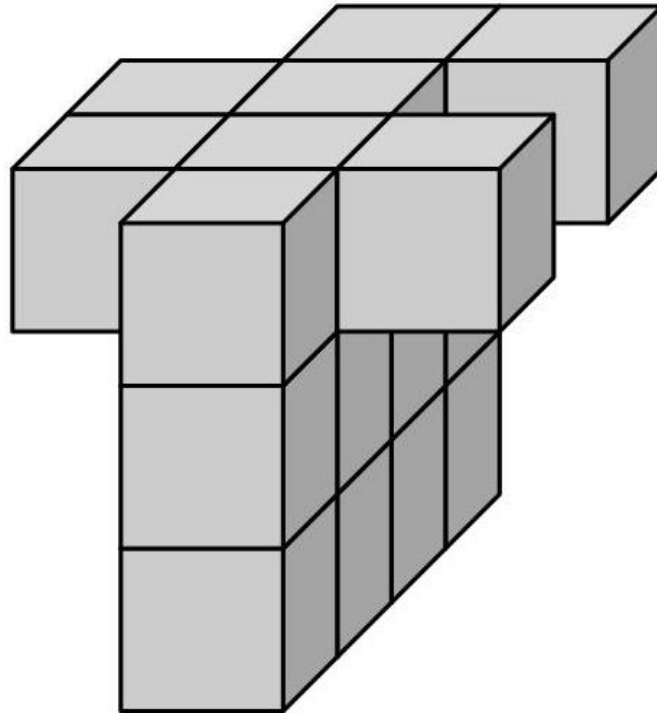


Challenge #8

How many cubes?

- A) Twenty-three cubes
- B) Twenty-four cubes
- C) Twenty-five cubes
- D) Twenty-six cubes
- E) Twenty-seven cubes

How many Cubes

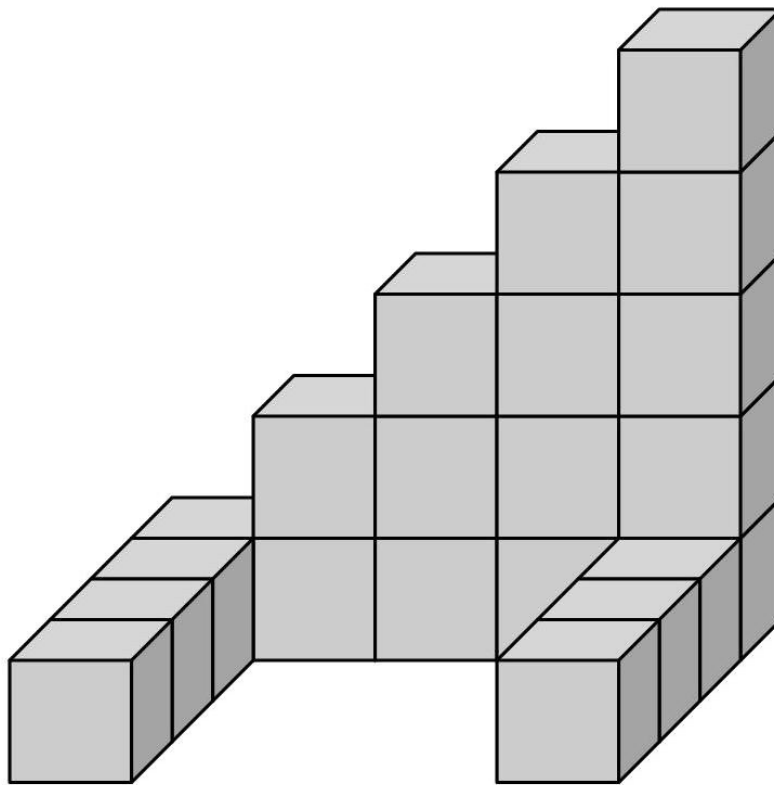


Challenge #9

How many cubes?

- A) Fourteen cubes
- B) Fifteen cubes
- C) Sixteen cubes
- D) Seventeen cubes
- E) Eighteen cubes

How many Cubes

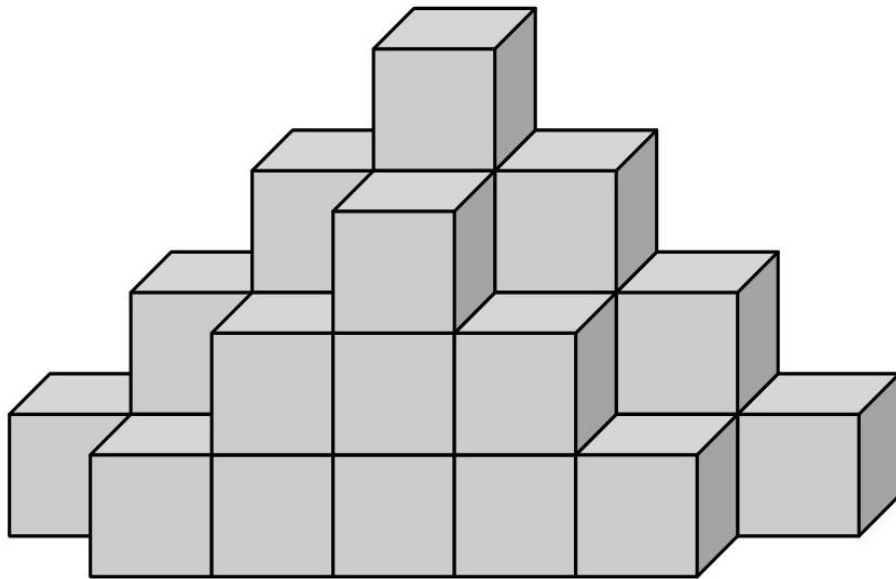


Challenge # 10

How many cubes?

- A) Eighteen cubes
- B) Nineteen cubes
- C) Twenty cubes
- D) Twenty-one cubes
- E) Twenty-two cubes

How many Cubes

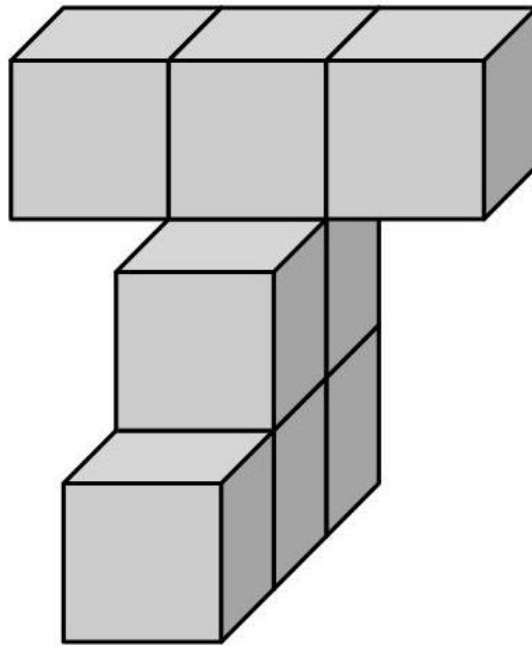


Challenge # 1 1

How many cubes?

- A) Twenty-four cubes
- B) Twenty-five cubes
- C) Twenty-six cubes
- D) Twenty-seven cubes
- E) Twenty-eight cubes

How many Cubes

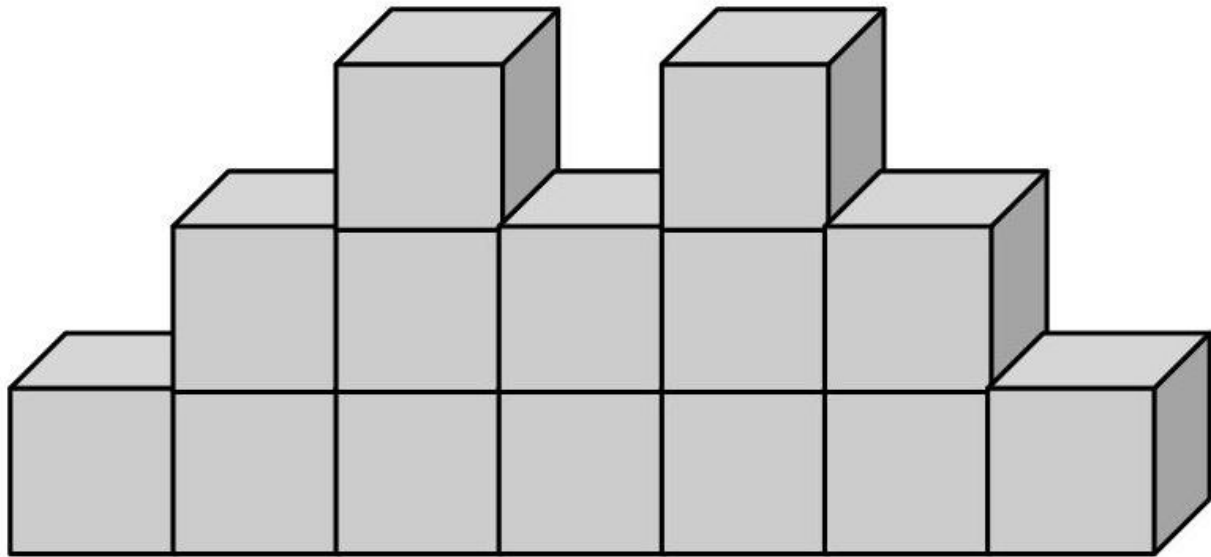


Challenge # 12

How many cubes?

- A) Four cubes
- B) Five cubes
- C) Six cubes
- D) Seven cubes
- E) Eight cubes

How many Cubes

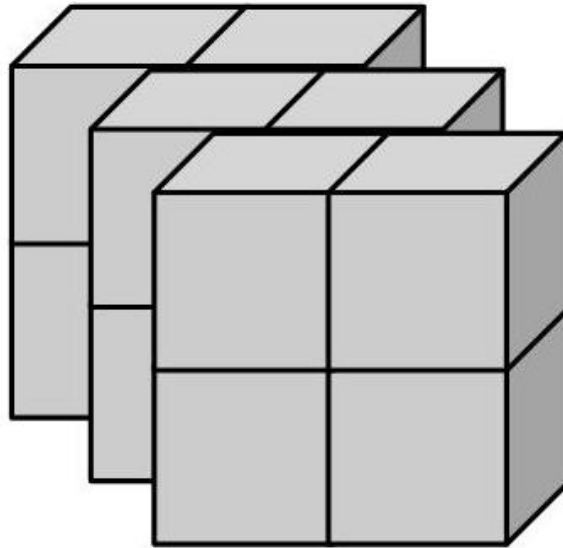


Challenge # 13

How many cubes?

- A) Twelve cubes
- B) Thirteen cubes
- C) Fourteen cubes
- D) Fifteen cubes
- E) Sixteen cubes

How many Cubes

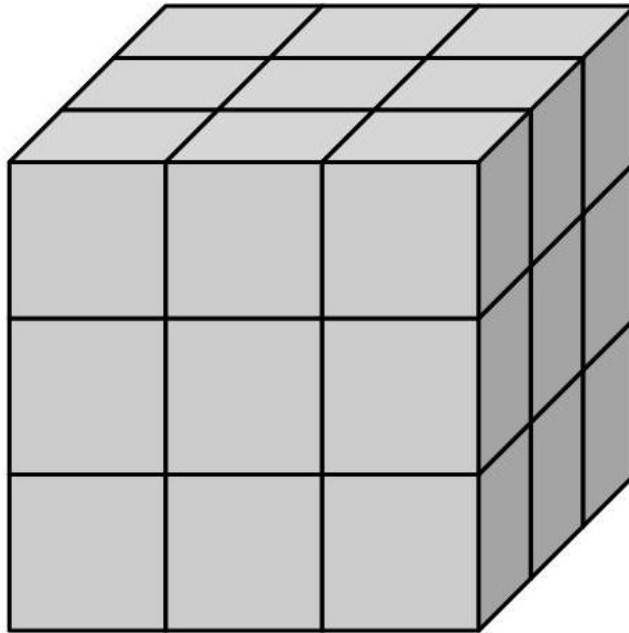


Challenge # 14

How many cubes?

- A) Four cubes
- B) Six cubes
- C) Eight cubes
- D) Ten cubes
- E) Twelve cubes

How many Cubes

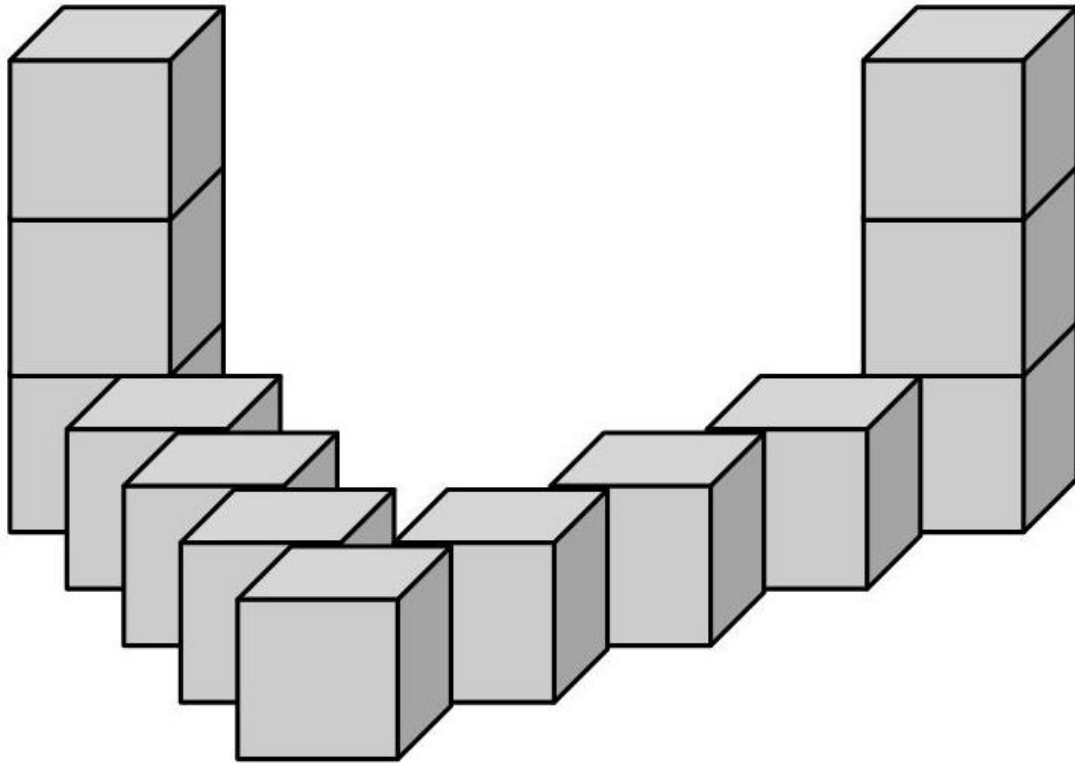


Challenge # 15

How many cubes?

- A) Nine cubes
- B) Eighteen cubes
- C) Twenty-seven cubes
- D) Thirty-six cubes
- E) Forty-eight cubes

How many Cubes

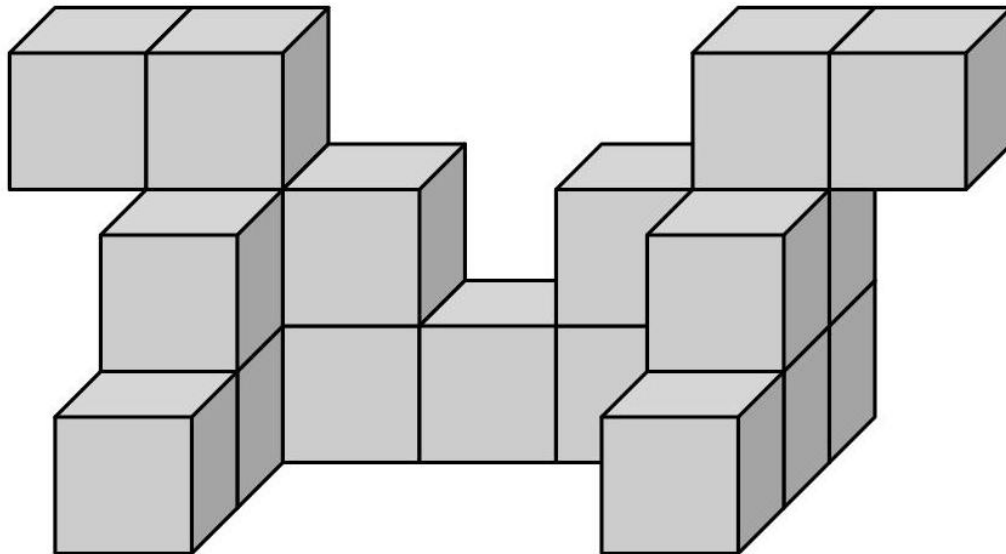


Challenge # 16

How many cubes?

- A) Twelve cubes
- B) Thirteen cubes
- C) Fourteen cubes
- D) Fifteen cubes
- E) Sixteen cubes

How many Cubes

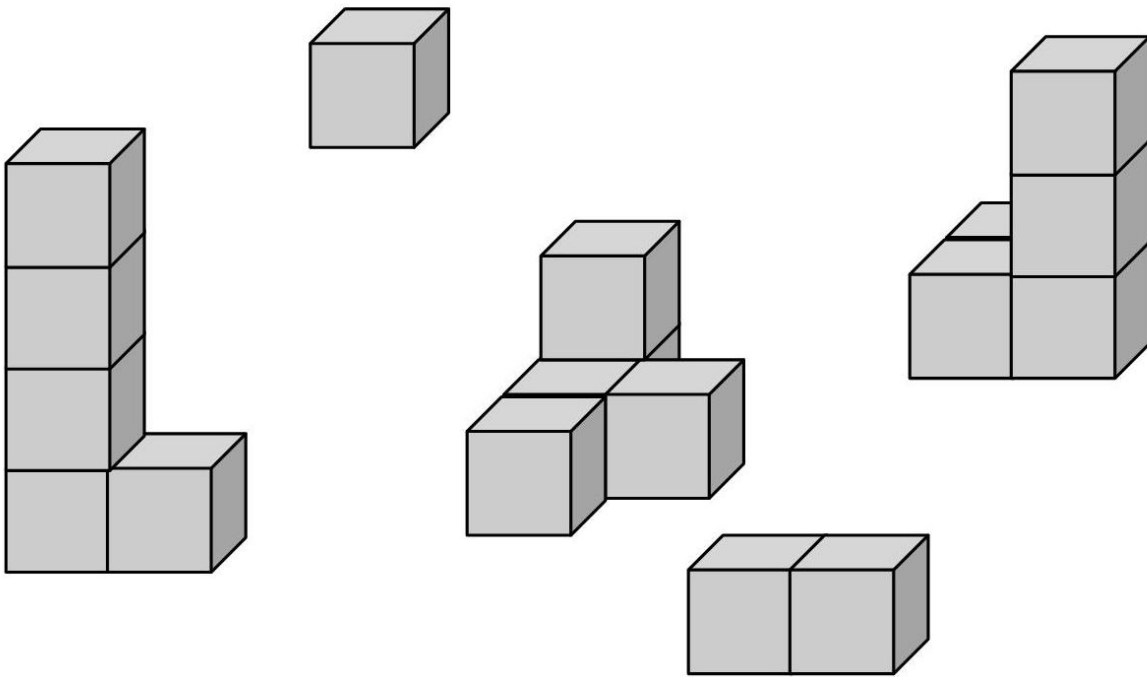


Challenge # 17

How many cubes?

- A) Seventeen cubes
- B) Eighteen cubes
- C) Nineteen cubes
- D) Twenty cubes
- E) Twenty-one cubes

How many Cubes

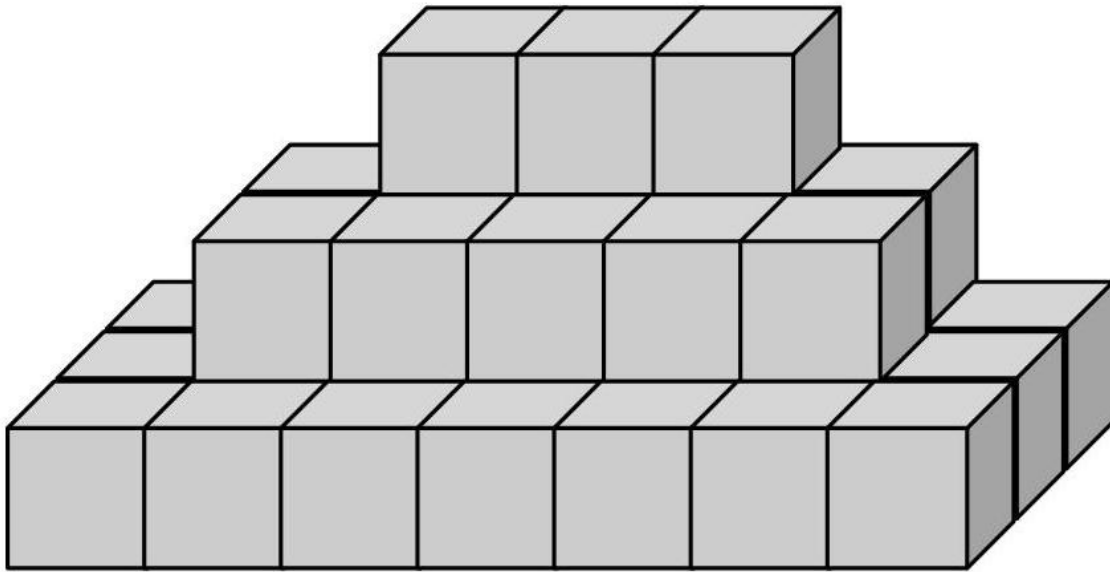


Challenge # 18

How many cubes?

- A) Eighteen cubes
- B) Nineteen cubes
- C) Twenty cubes
- D) Twenty-one cubes
- E) Twenty-two cubes

How many Cubes

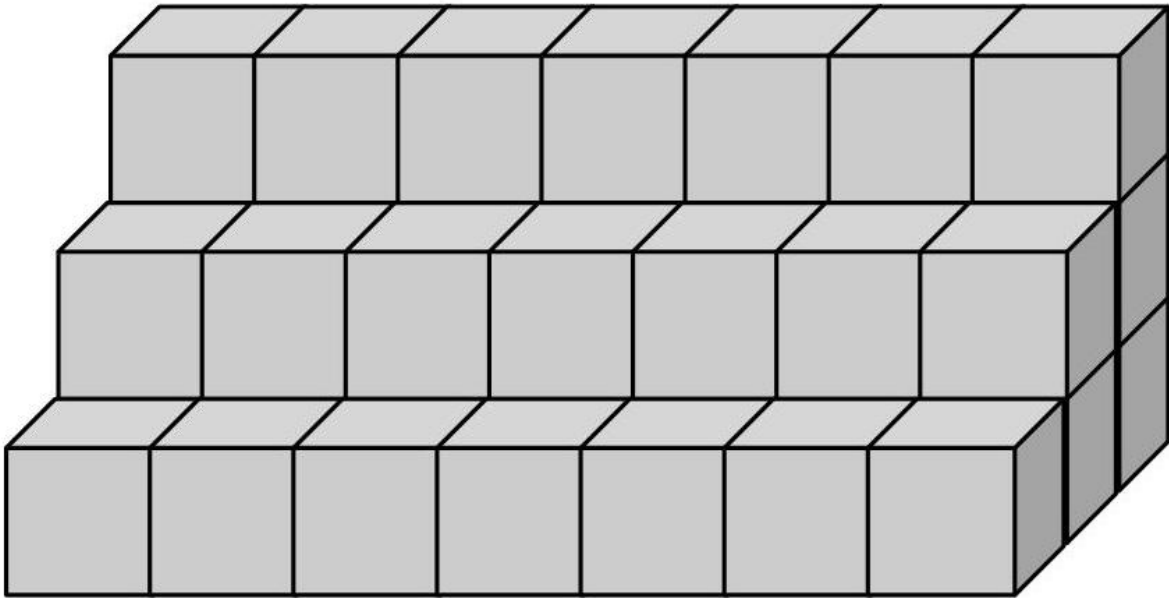


Challenge # 19

How many cubes?

- A) Thirty-six cubes
- B) Thirty-eight cubes
- C) Forty cubes
- D) Forty-two cubes
- E) Forty-four cubes

How many Cubes

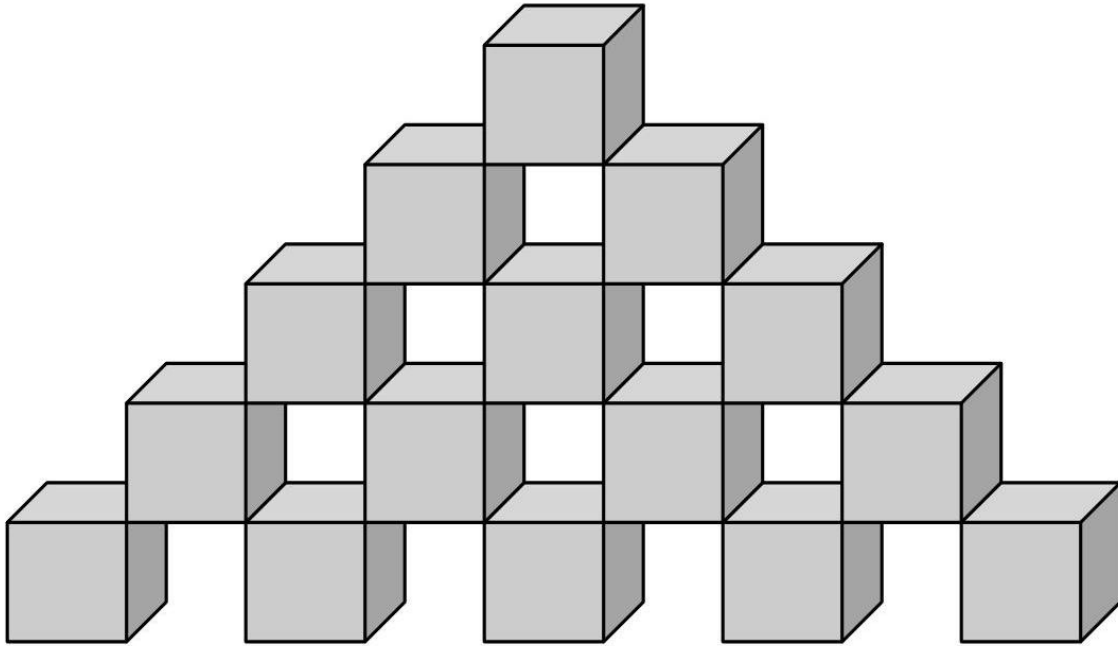


Challenge #20

How many cubes?

- A) Thirty-four cubes
- B) Thirty-six cubes
- C) Thirty-eight cubes
- D) Forty cubes
- E) Forty-two cubes

How many Cubes

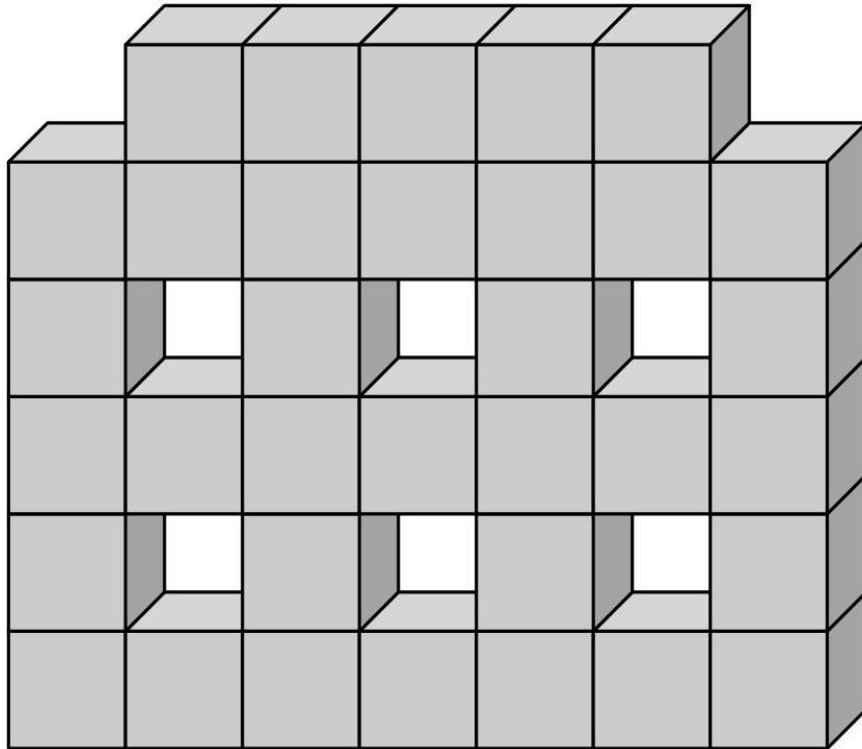


Challenge #21

How many cubes?

- A) Fourteen cubes
- B) Fifteen cubes
- C) Sixteen cubes
- D) Sixteen cubes
- E) Seventeen cubes

How many Cubes

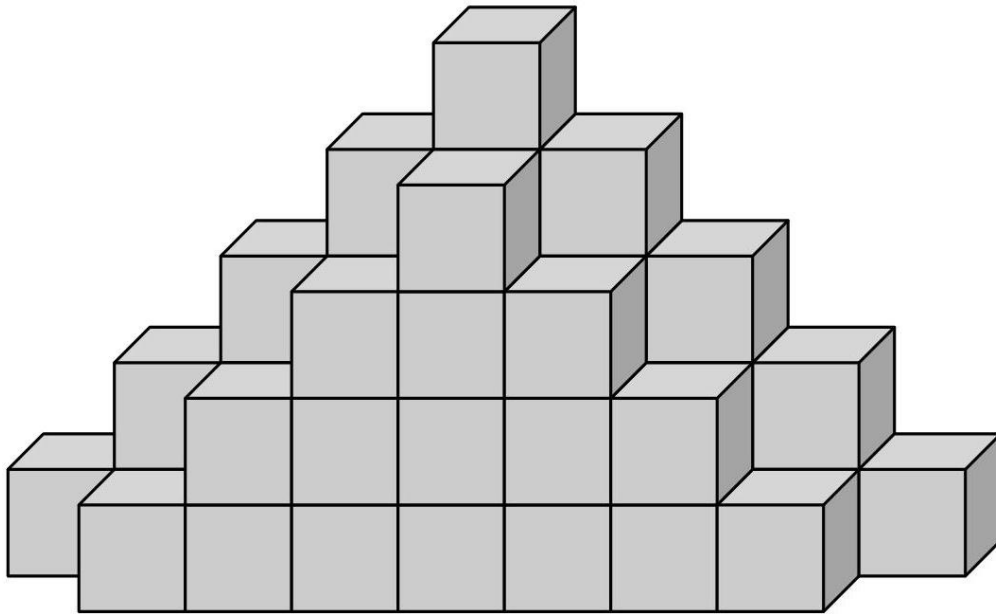


Challenge #22

How many cubes?

- A) Thirty cubes
- B) Thirty-one cubes
- C) Thirty-two cubes
- D) Thirty-three cubes
- E) Thirty-four cubes

How many Cubes

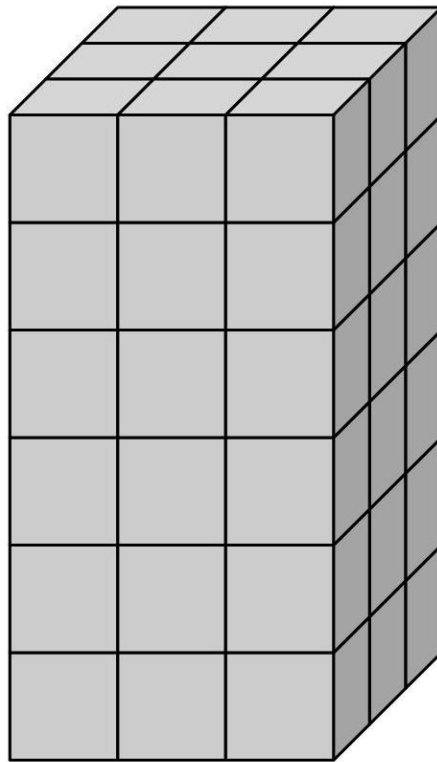


Challenge #23

How many cubes?

- A) Forty cubes
- B) Forty-one cubes
- C) Forty-two cubes
- D) Forty-three cubes
- E) Forty-four cubes

How many Cubes



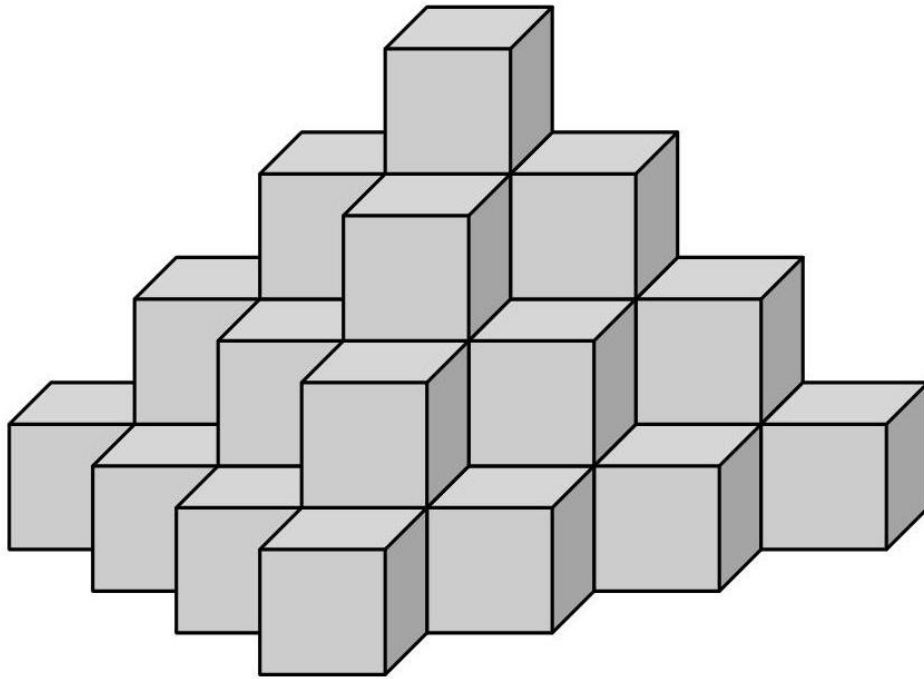
Challenge #24

How many cubes?

- A) Fifty cubes
- B) Fifty-two cubes
- C) Fifty-four cubes
- D) Fifty-six cubes
- E) Fifty-eight cubes



How many Cubes



Challenge #25

How many cubes?

- A) Twenty cubes
- B) Twenty-five cubes
- C) Thirty cubes
- D) Thirty-five cubes
- E) Forty cubes

Answers

- Challenge #1 Five cubes
- Challenge #2 Four cubes
- Challenge #3 Eight cubes
- Challenge #4 Seventeen cubes
- Challenge #5 Sixteen cubes
- Challenge #6 Twenty cubes
- Challenge #7 Thirteen cubes
- Challenge #8 Twenty-five cubes
- Challenge #9 Sixteen cubes
- Challenge #10 Twenty-one cubes
- Challenge #11 Twenty-five cubes
- Challenge #12 Eight cubes
- Challenge #13 Fourteen cubes
- Challenge #14 Twelve cubes
- Challenge #15 Twenty-seven cubes
- Challenge #16 Thirteen cubes
- Challenge #17 Nineteen cubes
- Challenge #18 Eighteen cubes
- Challenge #19 Forty-two cubes
- Challenge #20 Thirty-four cubes
- Challenge #21 Fifteen cubes
- Challenge #22 Thirty-four cubes
- Challenge #23 Forty-one cubes
- Challenge #24 Fifty-four cubes
- Challenge #25 Thirty cubes

Create your own design
(Use a ruler to make each line straight.)

How many cubes can you find in my awesome challenge?

- A) ____ cubes
- B) ____ cubes
- C) ____ cubes
- D) ____ cubes
- E) ____ cubes

