

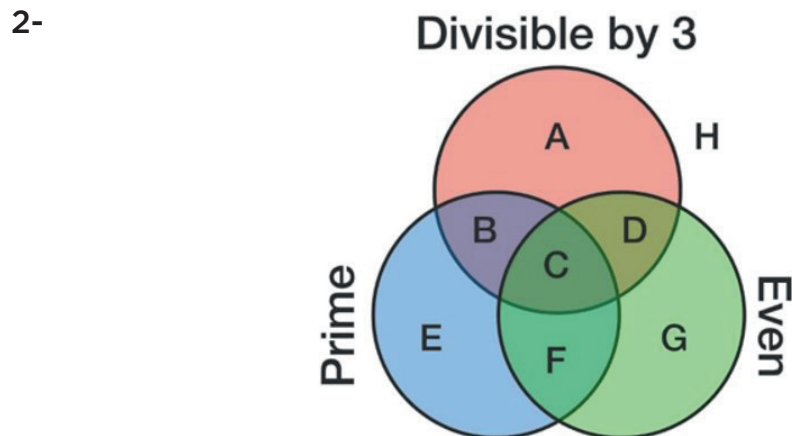


SAMPLE QUESTIONS

Grades 7-8

1- What is one quarter of the value of 8^{24} ?

- A) 8^6 B) 2^{24} C) 2^{72} D) 2^{70}
-



This Venn diagram represents all positive integers classified according to three properties: being divisible by 3, being prime, and being even. The letters A to H label the distinct regions formed by the intersections of these sets.

Which of the following statements are correct about the indicated regions?

- I. Region B contains exactly two elements.
- II. Region C is empty.
- III. The number 123456 belongs to region D.
- IV. Region F contains infinitely many elements.

- A) I and II
 B) II and III
 C) III and IV
 D) I and IV

3-



**It takes 9 cooks 9 hours to bake 9 beef briskets.
Assuming no change of rate, how many hours will it take 18
cooks to bake 18 beef briskets?**

- A) 3 B) 6 C) 9 D) 18
-

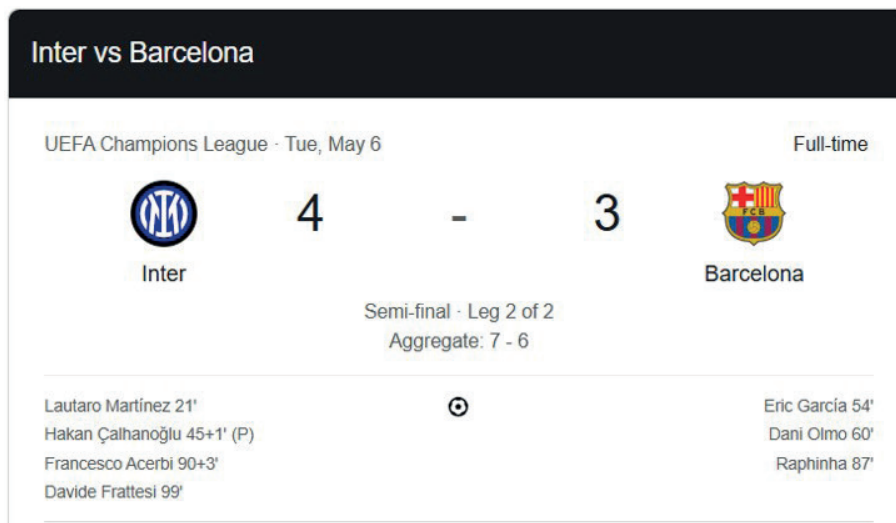
4-



**An F1 driver completes a lap in 60 seconds at 320 km/h. By
what percentage should the driver increase their speed to
complete the same lap in 50 seconds?**

- A) 20% B) 30% C) 40% D) 50%

5-



The chart above shows the scorers and the minutes at which goals were scored during the UEFA Champions League semi-final match between Inter and Barcelona. Ignoring any additional stoppage time, and considering that the match lasted 120 minutes including extra time, what is the correct order (from longest to shortest) of the total durations during which:

- I — Inter was leading
- B — Barcelona was leading
- D — the score was level (draw)?

- A) I > D > B
- B) D > I > B
- C) D > B > I
- D) I > B > D

6-

Which fraction is the largest?

- A) $\frac{2222}{2223}$
- B) $\frac{3333}{3335}$
- C) $\frac{4444}{4447}$
- D) They are all the same

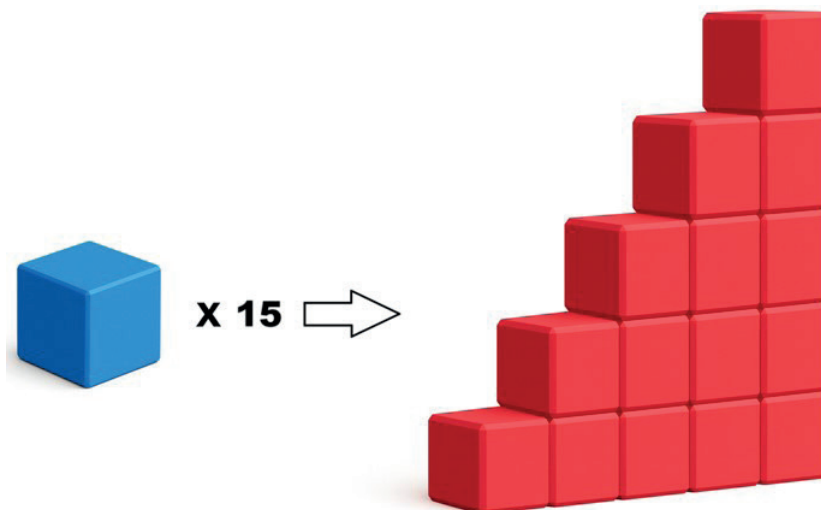
- 7- The function $f(x)=2x^2-3x+1$ is given.
What is the value of $f(-2)$?

A) -13
B) -9
C) 15
D) 7

- 8- What is the 10th term of the arithmetic sequence:
2, 5, 8, 11, ...?

A) 29
B) 30
C) 31
D) 32

9-

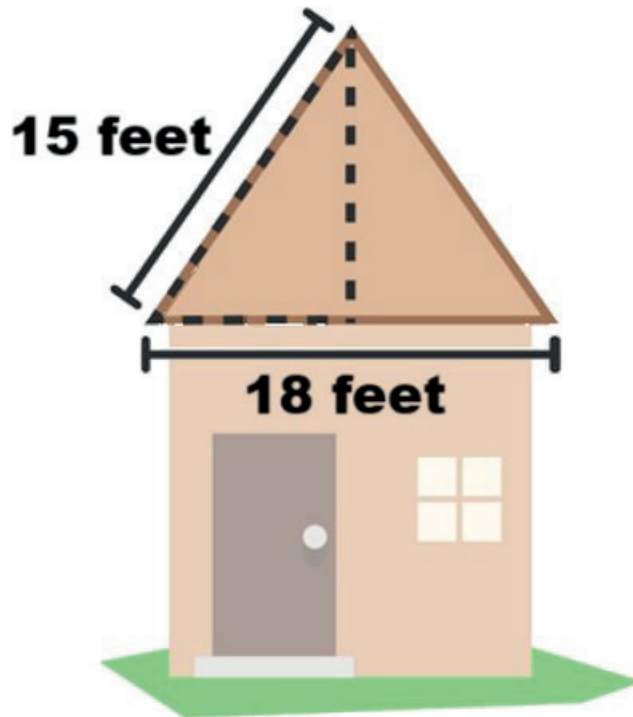


Fifteen unit blocks are painted blue, and then assembled into the staircase above. The staircase is then painted red on every visible surface: the top, front, back, and both of the sides, but not the bottom.

When the staircase is disassembled, what total surface area will still be painted blue, among all 15 blocks?

A) 40 B) 45 C) 50 D) 55

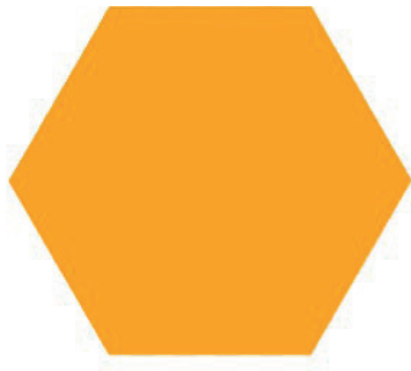
10-



A framer is building a roof in the shape of an isosceles triangle and needs to determine its height. They know the length of each equal side of the triangle (the sloping sides of the roof) and the width of the building (the base of the triangle). What is the height of the roof?

- A) 10 feet B) 11 feet C) 12 feet D) 13 feet

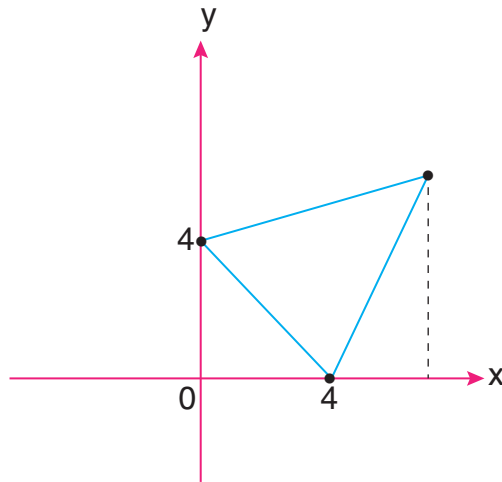
11-



How many lines of symmetry does a regular hexagon have?

- A) 4 B) 6 C) 8 D) 12

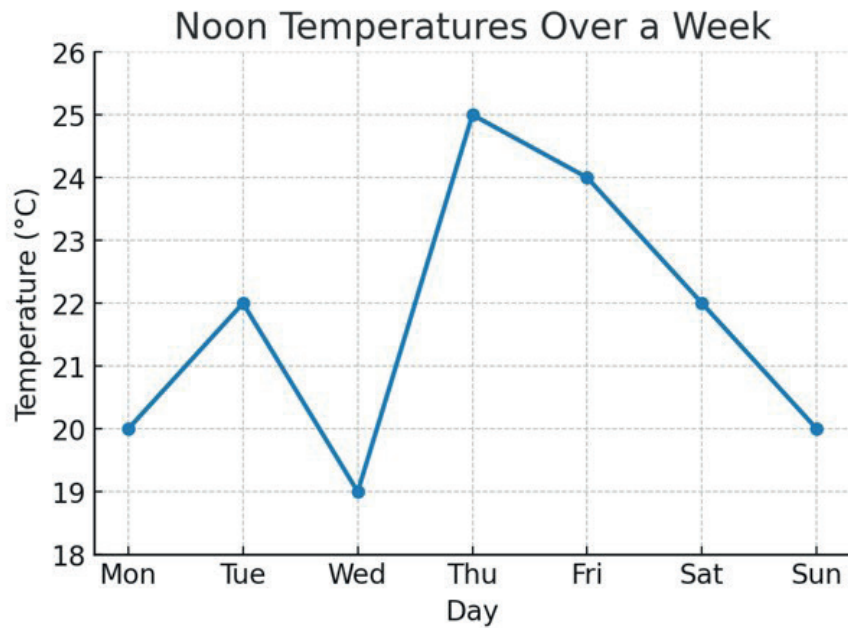
12-



A triangle is reflected across the y-axis. If one of its vertices is at $(7,6)$, what will be the coordinates of that vertex after the reflection?

- A) $(-7,-6)$
- B) $(-7,6)$
- C) $(7,-6)$
- D) $(6,7)$

13-



The line graph above shows the temperature at noon for a week in a specific location.

How many days during the week had temperatures below the average?

- A) 2
- B) 3
- C) 4
- D) 5

14-

A pie chart shows how 240 students travel to school: 30% walk, 45% take the bus, and the rest cycle. How many students cycle to school?

- A) 30
- B) 40
- C) 50
- D) 60

15-

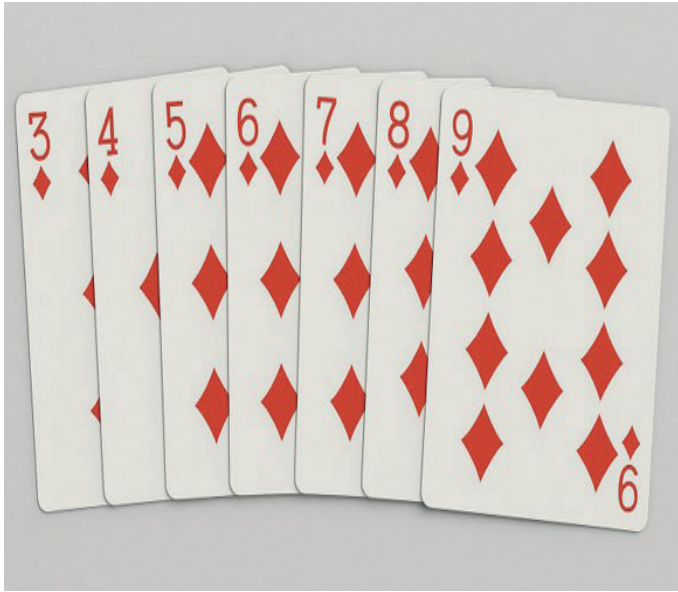


Jane wants to create a password for her credit card using the digits from her birth date 23/05. However, the bank does not allow customers to use their exact birth date as a password.

Accordingly, how many different passwords can Jane form using all the digits 2, 3, 0, and 5, excluding the password 2305 itself?

- A) 21
- B) 22
- C) 23
- D) 24

16-



Picking two distinct cards from the seven above, which of the following are correct about these two cards?

- I. An odd product is more likely.
- II. An even product and an odd product have the same probability.
- III. All the products have two-digit values.

- A) I and III B) II and III C) II D) III

17-

A student claims:

'Since 2^n is even for all $n \geq 1$, $2^n + 1$ must always be odd and therefore prime.'

Which of the following disproves the student's claim?

- A) $2^1 + 1 = 3$
- B) $2^2 + 1 = 5$
- C) $2^3 + 1 = 9$
- D) $2^4 + 1 = 17$

18-



Arya waters her garden every 6th day. If she waters it on a Friday, how many days later will she next water it on a Friday?

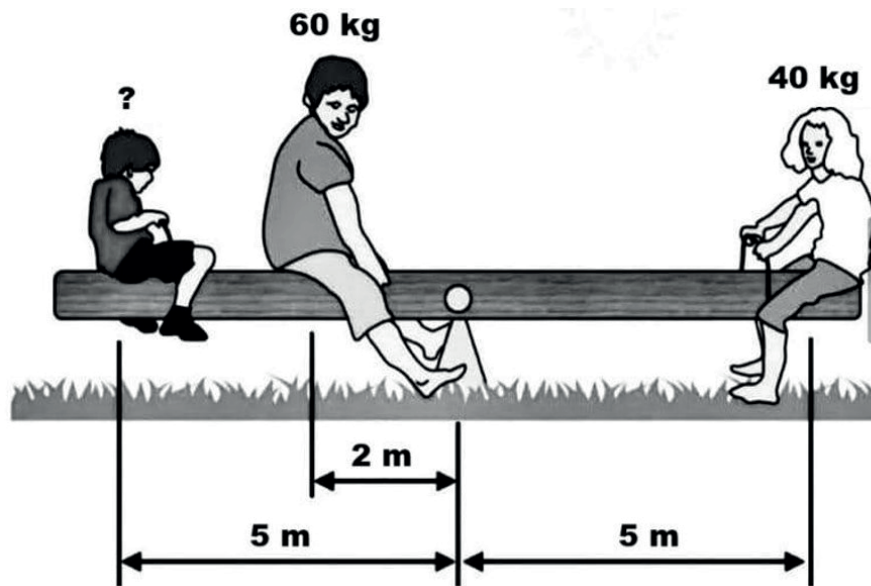
A) 6

B) 12

C) 18

D) 42

19-

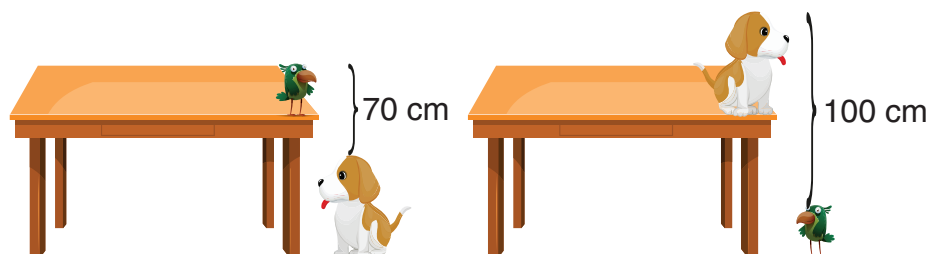


In a balanced lever (like a seesaw), the moment of a weight is directly proportional to its mass and its distance from the pivot (centre). This means that an object with a larger mass must be closer to the centre to balance a lighter object placed farther away. For example, a 10 kg object placed 10 metres from the center can be balanced by a 20 kg object placed 5 metres from the center, since $10 \times 10 = 20 \times 5$. If there are multiple objects on one side, the total moment is the sum of the individual moments.

Accordingly, how heavy should the boy on the far left of the picture above be for the seesaw to remain balanced?

- A) 12 kg B) 16 kg C) 20 kg D) 24 kg

20-



What is the height of the table shown above?

- A) 75 cm B) 80 cm C) 85 cm D) 90 cm