



DREAMLINE STEAM OLYMPIAD

3–4

GRADE



Grade 3–4 Mathematics Olympiad Sample Questions

1

A school collected **2,485** plastic bottles in September and **1,376** bottles in October. How many bottles did the school collect altogether?

☐ A 3,751☒ B 3,861☐ C 3,961☐ D 4,861

Solution: $2,485 + 1,376 = 3,861$

✓ **Answer: B) 3,861**

2

Which number is a smallest **common multiple of 6 and 8**?

☒ A 24☐ B 28☐ C 30☐ D 36

Solution:

Multiples of 6: 6, 12, 18, 24, ...

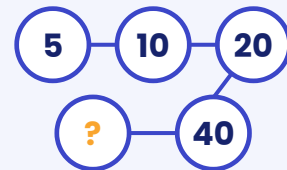
Multiples of 8: 8, 16, 24, ...

The smallest common multiple is: 24

✓ **Answer: A) 24**

3

A robot follows this number pattern:
What number comes next?

☐ A 45☐ B 60☒ C 80☐ D 100

Solution: Each number is multiplied by 2: $40 \times 2 = 80$

✓ **Answer: C) 80**

4

Maya calculates:

$$25 + 37 + 75 + 63$$

Instead of adding from left to right, she pairs numbers cleverly. What is the answer?

(A) 180

(B) 190

(C) 195

(D) 200

Solution: $25 + 75 = 100$ and $37 + 63 = 100$

Therefore: $100 + 100 = 200$

✓ **Answer:** D) 200

5

In a secret code, each symbol represents a number.

$$\star = 7, \bullet = 4$$

What is: $\star + \bullet + \bullet + \star$?

(A) 14

(B) 17

(C) 18

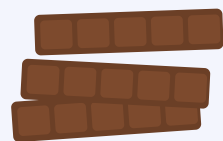
(D) 22

Solution: $7 + 4 + 4 + 7 = 18$

✓ **Answer:** D) 22

6

A factory packs **9 boxes** with **4 chocolate bars** in each box.
How many bars are packed?



(A) 32

(B) 36

(C) 40

(D) 44

Solution: $9 \times 4 = 36$

✓ **Answer:** B) 36

7

A large rectangle is made from two smaller rectangles.

The first has an area of 24 cm^2 , and the second has an area of 18 cm^2 .

What is the total area?

(A) 32 cm^2

(B) 40 cm^2

(C) 42 cm^2

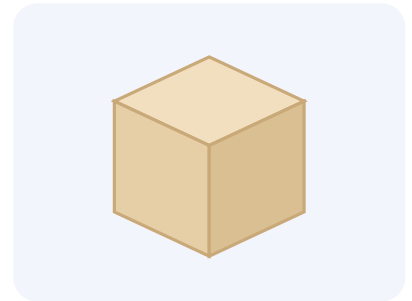
(D) 48 cm^2

Solution: $24 + 18 = 42$

✓ **Answer: C)** 42 cm^2

8

A cube has how many **faces, edges, and vertices**?



(A) 6 faces, 8 edges, 12 vertices

(B) 12 faces, 8 edges, 6 vertices

(C) 8 faces, 12 edges, 6 vertices

(D) 6 faces, 12 edges, 8 vertices

Solution: A cube has:

- 6 faces
- 12 edges
- 8 vertices

✓ **Answer: D)** 6 faces, 12 edges, 8 vertices

9

Which capital letter has a **vertical line of symmetry**?

(A) F

(B) G

(C) H

(D) R

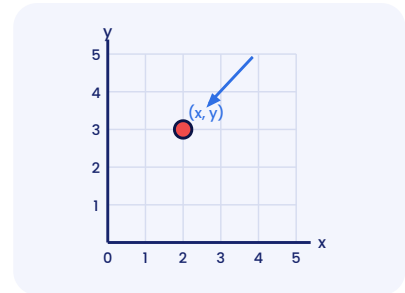
Solution: The letter *H* has a vertical line of symmetry.

✓ **Answer: C)** H

10

Lina is standing at a point on a grid. She moves **4 squares east** and then **8 squares north**.

How many squares does she move altogether?

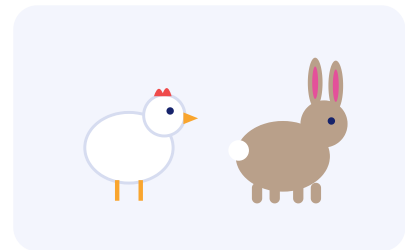
☐ (A) 5☐ (B) 6☐ (C) 7☒ (D) 12

Solution: $4 + 8 = 12$

✓ **Answer:** D) 12

11

A farm has chickens and rabbits. There are **10 animals** altogether. The animals have **28 legs** in total. How many rabbits are there?

☐ (A) 3☒ (B) 4☐ (C) 5☐ (D) 6

Solution: If all 10 animals were chickens: $10 \times 2 = 20$ legs

There are: $28 - 20 = 8$ extra legs.

Each rabbit has 2 more legs than a chicken: $8 \div 2 = 4$

So there are **4 rabbits**.

✓ **Answer:** B) 4

12

A mystery number is multiplied by 3, then 5 is added. The result is 26.

What is the mystery number?

☐ (A) 5☐ (B) 6☒ (C) 7☐ (D) 8

Solution: Work backward:

$$26 - 5 = 21$$

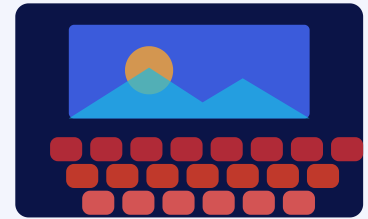
$$21 \div 3 = 7$$

✓ **Answer: C) 7**

13

A movie begins at **2:35 p.m.** and lasts **1 hour 45 minutes**.

At what time does it finish?

☐ (A) 3:50 p.m.☐ (B) 4:10 p.m.☐ (C) 4:15 p.m.☒ (D) 4:20 p.m.

Solution: $2:35 + 1 \text{ hour} = 3:35$

$$3:35 + 45 \text{ min} = 4:20$$

✓ **Answer: D) 4:20 p.m.**

14

Sara is **6th from the front** and **9th from the back** in a line.

How many children are in the line?

☒ (A) 14☐ (B) 15☐ (C) 16☐ (D) 17

Solution: $6 + 9 - 1 = 14$

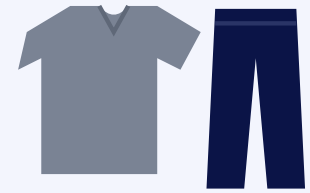
Sara is counted twice, so subtract 1.

✓ **Answer: A) 14**

15

A child has **3 shirts** and **2 pairs of trousers**. Each shirt can be worn with both pair of trousers.

How many different outfits can the child make?



(A) 5

(B) 6

(C) 8

(D) 9

Solution: $3 \times 2 = 6$

✓ **Answer: B) 6**

16

A bag contains red, blue, and green balls. Without looking, what is the **smallest number of balls** you must take to guarantee that you have **two balls of the same color**?



(A) 2

(B) 3

(C) 4

(D) 5

Solution: In the worst case, you could pick:

- 1 red
- 1 blue
- 1 green

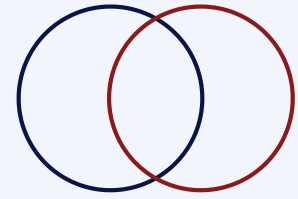
The next ball must match one of those colors. $3 + 1 = 4$

✓ **Answer: C) 4**

17

In a class, **18 students** like apples, **12 students** like bananas, and **5 students** like both.

How many students like **at least one** of the two fruits?

☐ A 20☒ B 25☐ C 30☐ D 35

Solution: $18 + 12 - 5 = 25$

The 5 students who like both were counted twice.

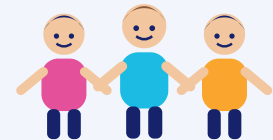
✓ **Answer: B) 25**

18

Three children—Ali, Ben, and Sara—finish a race.

- Ali finishes before Ben.
- Sara finishes after Ali.
- Ben finishes after Sara.

Who finishes **first**?

☒ A Ali☐ B Ben☐ C Sara☐ D Cannot be determined

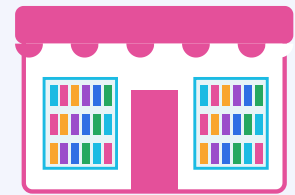
Solution: The order must be: Ali → Sara → Ben
Therefore, Ali finishes first.

✓ **Answer: A) Ali**

19

A shop records the number of books sold on four days:

Day	Books
Monday	18
Tuesday	25
Wednesday	22
Thursday	15



How many books were sold altogether?

☐ (A) 70☐ (B) 75☐ (C) 78☒ (D) 80

Solution: $18 + 25 + 22 + 15 = 80$

✓ **Answer:** D) 80

20

A teacher has **48 pencils**. She puts them into **8 equal groups**.

How many pencils are in each group?

☐ (A) 5☒ (B) 6☐ (C) 7☐ (D) 8

Solution: $48 \div 8 = 6$

✓ **Answer:** B) 6

21

Look at the powers of 7:

$$7^1, 7^2, 7^3, 7^4, \dots$$

Their last digits are:

$$7, 9, 3, 1, 7, 9, 3, 1, \dots$$

What is the last digit of 7^{2026} ?

(A) 1**(B)** 3**(C)** 7**(D)** 9

Solution: The cycle has length 4.

$$2026 \div 4 = 506 \text{ remainder } 2$$

So we need the **2nd** number in the cycle: 9

✓ **Answer: D) 9**

22

Without adding every number separately, find:

$$1 + 2 + 3 + \dots + 20$$

(A) 200**(B)** 210**(C)** 220**(D)** 230

Solution: Pair the numbers:

$$(1 + 20), (2 + 19), (3 + 18), \dots$$

There are 10 pairs, each equal to 21.

$$10 \times 21 = 210$$

✓ **Answer: B) 210**

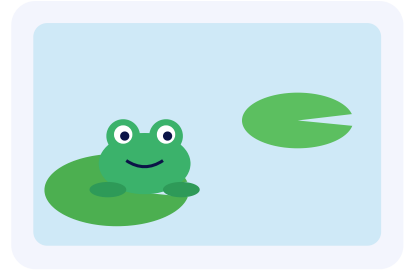
23

A frog can jump exactly **40 cm with each jump**.

It makes:

- **7 jumps north**
- **5 jumps west**

How many meters does the frog travel altogether?

**(A)** 3,8 m**(B)** 4 m**(C)** 4,4 m**(D)** 4,8 m

Solution: Each jump = 40 cm

Total jumps: $7 + 5 = 12$

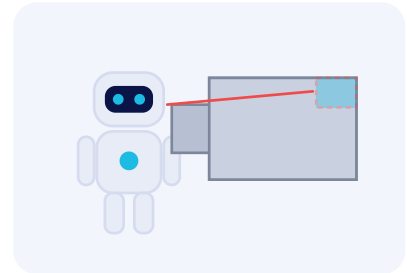
Total distance: $12 \times 40 = 480$ cm

Convert to meters: $480 \text{ cm} = 4.8 \text{ m}$

24

A repair robot is building a metal plate shaped like a $12 \text{ cm} \times 8 \text{ cm}$ rectangle. Suddenly, a laser cuts out a $3 \text{ cm} \times 2 \text{ cm}$ rectangle from one corner.

What is the remaining area of the metal plate?

**(A)** 72 cm^2 **(B)** 84 cm^2 **(C)** 90 cm^2 **(D)** 96 cm^2

Solution: Original Area = $12 \text{ cm} \times 8 \text{ cm} = 96 \text{ cm}^2$

Cutout Area = $3 \text{ cm} \times 2 \text{ cm} = 6 \text{ cm}^2$

Subtract the cutout area from the original area:

Remaining Area = Original Area – Cutout Area

Remaining Area = $96 \text{ cm}^2 - 6 \text{ cm}^2 = 90 \text{ cm}^2$

✓ **Answer:** 90 cm^2

25

Using the digits 1, 2, 3, how many different **two-digit numbers** can be formed if no digit is repeated?

(A) 3**(B)** 4**(C)** 6**(D)** 9

Solution: For the tens digit, there are 3 choices.
For the units digit, there are 2 remaining choices.

$$3 \times 2 = 6$$

The numbers include: 12, 13, 21, 23, 31, 32

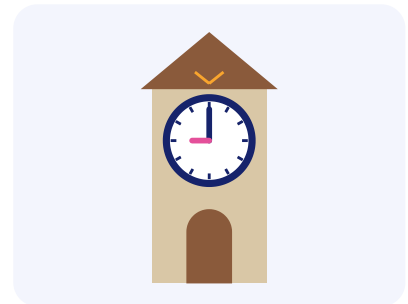
✓ **Answer: C) 6**

26

An ancient clock tower in a forgotten city rings with magical precision. The bell rings every 16 minutes, and the first ring is at exactly 8:00 a.m.

A treasure hunter is waiting for the 16th ring, because that is when the secret door will open.

At what time will the 16th ring happen?

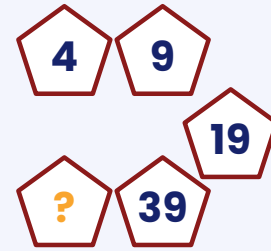
**(A)** 11:44 a.m.**(B)** 12:00 p.m.**(C)** 12:16 p.m.**(D)** 12:32 p.m.**Solution**

- The 1st ring is at 8:00 a.m.
- The 16th ring is 15 intervals later.
- Time passed: $15 \times 16 = 240$ minutes
- Convert to hours: 240 minutes = 4 hours
- Add 4 hours to 8:00 a.m.: 8:00 a.m. + 4 hours = 12:00 p.m.

✓ **Answer: B) 12:00 p.m.**

27

Joseph's father created a special password lock. The password follows a hidden mathematical pattern. Joseph has figured out all the numbers except the last one. Find the missing number to unlock the phone.

**(A)** 49**(B)** 59**(C)** 69**(D)** 79**Solution**

$$4 \times 2 + 1 = 9$$

$$9 \times 2 + 1 = 19$$

$$19 \times 2 + 1 = 39$$

$$39 \times 2 + 1 = 79$$

✓ **Answer: D) 79**

28

A three-digit number has the following properties:

- The hundreds digit is 4.
- The tens digit is **twice** the units digit.
- The sum of all three digits is 13.

What is the number?

(A) 463**(B)** 472**(C)** 481**(D)** 491

Solution: Let the units digit be x .

Then the tens digit is $2x$.

The digit sum gives: $4 + 2x + x = 13 \Rightarrow 3x = 9 \Rightarrow x = 3$

So the tens digit is: $2(3) = 6$

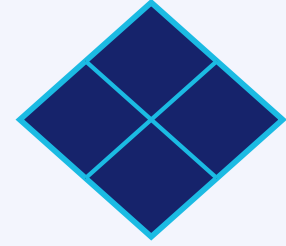
Therefore, the number is: 463

✓ **Answer: A) 463**

29

A square has a perimeter of 32 cm. It is divided into **4 equal smaller squares**.

What is the **total perimeter of all four small squares**, counting the internal edges as well?

**(A)** 32 cm**(B)** 48 cm**(C)** 64 cm**(D)** 128 cm

Solution: The large square has side: $32 \div 4 = 8$ cm

Dividing it into 4 equal squares gives 2×2 smaller squares.

Each small square has side: $8 \div 2 = 4$ cm

Each small square has perimeter: $4 \times 4 = 16$ cm

There are 4 small squares: $4 \times 16 = 64$ cm

The question asks us to count **all edges of each small square**, including internal edges.

✓ **Answer: C) 64 cm**

30

A treasure chest contains some coins.

First, **half of the coins are removed**. Then **6 more coins are removed**. Finally, **8 coins are added**. There are now **22 coins** in the chest.

How many coins were there at the beginning?

**(A)** 32**(B)** 36**(C)** 40**(D)** 44

Solution: Work backward.

After 8 coins were added, there were 22: $22 - 8 = 14$

Before the 6 coins were removed: $14 + 6 = 20$

At this point, only half of the original coins remained.

Therefore: $20 \times 2 = 40$

So there were **40 coins** at the beginning.

✓ **Answer: C) 40**