

FREE PRACTICE PACK · EDITION 1

Class 8 Mathematics Olympiad practice

16 original questions + explained answers

For students preparing for SOF IMO.

Inside this pack

Eight topic-practice questions and an eight-question, 20-minute mini-mock.

Topics selected for practice

- Exponents and rational numbers
- Linear equations and algebra
- Geometry and proportionality
- Data, graphs and probability

How to use it

Try the practice first. Complete the mini-mock in one sitting. Check the explanations, mark mistakes, and retry them the next day.

This pack covers selected topics. It is original BodhiScore material, independent of SOF, and is not an official paper or a full-length exam. Check the official syllabus for the complete scope.

Topic practice

Work through these eight questions without a timer. Explain your choice before checking the solutions.

1. Exponents and rational numbers

Evaluate $2^3 \times 2^4$.

A. 2^{12}

B. 4^7

C. 2^1

D. 2^7

2. Linear equations and algebra

Solve $3(x - 2) = 21$.

A. 7

B. 9

C. 23

D. 5

3. Geometry and proportionality

A right triangle has legs 9 cm and 12 cm. Find its hypotenuse.

A. 21 cm

B. 13 cm

C. 15 cm

D. 18 cm

Topic practice (continued)

4. Data, graphs and probability

A fair die is rolled once. What is the probability of getting a number greater than 4?

- | | |
|-----------------|-----------------|
| A. $1/6$ | B. $1/3$ |
| C. $1/2$ | D. $2/3$ |
-

5. Exponents and rational numbers

Simplify $(-3/5) + (7/10)$.

- | | |
|-------------------|-------------------|
| A. $4/15$ | B. $-1/10$ |
| C. $13/10$ | D. $1/10$ |
-

6. Linear equations and algebra

A taxi charges 40 rupees plus 12 rupees per kilometre. What is the fare for 8 km?

- | | |
|----------------------|----------------------|
| A. 160 rupees | B. 96 rupees |
| C. 112 rupees | D. 136 rupees |
-

Topic practice (continued)

7. Geometry and proportionality

A map scale is 1 cm : 5 km. Two towns are 7.4 cm apart on the map. What is the actual distance?

- | | |
|-----------------|-------------------|
| A. 74 km | B. 12.4 km |
| C. 35 km | D. 37 km |
-

8. Data, graphs and probability

A data set is 4, 7, 7, 8, 14. What is its median?

- | | |
|-------------|--------------|
| A. 7 | B. 8 |
| C. 9 | D. 14 |
-

Timed mini-mock

Set a 20-minute timer for these eight questions. Score 1 point per correct answer; there is no penalty for an incorrect answer. This is BodhiScore's practice scoring.

9. Exponents and rational numbers

Which is equal to 5^{-2} ?

- | | |
|-------------------|-----------------|
| A. $-1/25$ | B. -25 |
| C. $1/25$ | D. 25 |
-

10. Linear equations and algebra

The sum of three consecutive integers is 72. What is the largest?

- | | |
|--------------|--------------|
| A. 23 | B. 24 |
| C. 25 | D. 26 |
-

11. Geometry and proportionality

A 10 m ladder reaches 8 m up a wall. How far is its base from the wall?

- | | |
|----------------|---------------|
| A. 6 m | B. 8 m |
| C. 18 m | D. 4 m |
-

Timed mini-mock (continued)

12. Data, graphs and probability

A bag has 3 red, 4 blue and 5 green tokens. What is the chance of not drawing green?

- | | |
|------------------|------------------|
| A. $5/12$ | B. $7/12$ |
| C. $2/3$ | D. $3/4$ |
-

13. Exponents and rational numbers

A square has area 196 cm^2 . What is its perimeter?

- | | |
|-----------------|------------------|
| A. 56 cm | B. 196 cm |
| C. 28 cm | D. 42 cm |
-

14. Linear equations and algebra

For $y = 2x + 3$, what is y when $x = -4$?

- | | |
|---------------|--------------|
| A. -11 | B. -5 |
| C. 5 | D. 11 |
-

15. Geometry and proportionality

A cuboid measures 8 cm by 5 cm by 3 cm. What is its total surface area?

- | | |
|------------------------------|------------------------------|
| A. 158 cm^2 | B. 240 cm^2 |
| C. 120 cm^2 | D. 128 cm^2 |
-

Timed mini-mock (continued)

16. Data, graphs and probability

A cyclist's distances for four days are 12, 18, 15 and 23 km. What is the mean distance?

A. 19 km

B. 16 km

C. 17 km

D. 18 km

Answers and explanations

Check why the answer works, then retry any question you missed.

1. D - 2^7

When multiplying powers with the same base, add exponents: $2^{(3+4)} = 2^7$.

2. B - 9

Divide by 3 to get $x - 2 = 7$, so $x = 9$.

3. C - 15 cm

By Pythagoras, $c^2 = 9^2 + 12^2 = 225$, so $c = 15$ cm.

4. B - $1/3$

The outcomes 5 and 6 qualify, so probability is $2/6 = 1/3$.

5. D - $1/10$

$-6/10 + 7/10 = 1/10$.

6. D - 136 rupees

$40 + 12 \times 8 = 136$ rupees.

7. D - 37 km

$7.4 \times 5 = 37$ km.

8. A - 7

The middle of the five ordered values is 7.

9. C - $1/25$

A negative exponent means reciprocal: $5^{-2} = 1/(5^2) = 1/25$.

Answers and explanations (continued)

10. C - 25

The integers are 23, 24, 25, whose sum is 72.

11. A - 6 m

The right triangle has $\text{base}^2 = 10^2 - 8^2 = 36$, so base is 6 m.

12. B - 7/12

There are 7 non-green tokens out of 12 total, so chance is 7/12.

13. A - 56 cm

Its side is $\sqrt{196} = 14$ cm; perimeter is $4 \times 14 = 56$ cm.

14. B - -5

$2(-4) + 3 = -8 + 3 = -5$.

15. A - 158 cm²

Surface area = $2(8 \times 5 + 8 \times 3 + 5 \times 3) = 2(79) = 158 \text{ cm}^2$.

16. C - 17 km

The total is 68 km; 68 divided by 4 is 17 km.

Topic scope checked against SOF syllabus: [SOF IMO Class 8 syllabus](#)