

FREE PRACTICE PACK · EDITION 1

Class 7 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

- Integers and rational numbers
- Algebra and equations
- Geometry and measurement
- Data and reasoning

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. Integers and rational numbers

Evaluate $-12 + 5 \times 3$.

A. 3

B. -3

C. -36

D. -21

2. Algebra and equations

Solve $4x - 7 = 21$.

A. 7

B. 8

C. 5

D. 6

3. Geometry and measurement

A triangle has angles 42 degrees and 73 degrees. Find its third angle.

A. 115 degrees

B. 55 degrees

C. 65 degrees

D. 75 degrees

Topic practice (continued)

4. Data and reasoning

The ratio of red to blue marbles is 3:5. There are 40 marbles total. How many are red?

- | | |
|--------------|--------------|
| A. 15 | B. 20 |
| C. 25 | D. 12 |
-

5. Integers and rational numbers

Which is greatest?

- | | |
|--------------------------|--------------------------|
| A. $-\frac{3}{4}$ | B. $-\frac{5}{6}$ |
| C. $-\frac{7}{8}$ | D. $-\frac{2}{3}$ |
-

6. Algebra and equations

Simplify $3(2a - 5) + 4a$.

- | | |
|---------------------|----------------------|
| A. $10a - 5$ | B. $6a - 15$ |
| C. $2a - 15$ | D. $10a - 15$ |
-

7. Geometry and measurement

A circle has radius 7 cm. Using $\pi = \frac{22}{7}$, what is its circumference?

- | | |
|-----------------|------------------|
| A. 88 cm | B. 154 cm |
| C. 22 cm | D. 44 cm |
-

Topic practice (continued)

8. Data and reasoning

A bag has 4 white and 6 black balls. What is the probability of drawing a white ball?

A. $2/5$

B. $3/5$

C. $2/3$

D. $1/5$

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. Integers and rational numbers

A diver is 18 m below sea level and rises 7 m. What is the diver's new position relative to sea level?

- | | |
|-----------------|-----------------|
| A. 25 m | B. -25 m |
| C. -11 m | D. 11 m |
-

10. Algebra and equations

If 5 notebooks cost 175 rupees equally, what is the cost of 8 notebooks?

- | | |
|----------------------|----------------------|
| A. 270 rupees | B. 280 rupees |
| C. 300 rupees | D. 250 rupees |
-

11. Geometry and measurement

A rectangular prism is 6 cm by 4 cm by 5 cm. What is its volume?

- | | |
|------------------------------|------------------------------|
| A. 15 cm^3 | B. 60 cm^3 |
| C. 120 cm^3 | D. 240 cm^3 |
-

Timed mini-mock (continued)

12. Data and reasoning

The mean of 9, 11, 14 and x is 12. Find x .

- | | |
|--------------|--------------|
| A. 13 | B. 14 |
| C. 15 | D. 12 |
-

13. Integers and rational numbers

A temperature drops 6 degrees each hour from 8 degrees. What is it after 3 hours?

- | | |
|----------------------|-----------------------|
| A. 26 degrees | B. -10 degrees |
| C. -8 degrees | D. -2 degrees |
-

14. Algebra and equations

The perimeter of a square is $4x + 12$ cm. What is its side length?

- | | |
|------------------------|-----------------------|
| A. $4x + 3$ cm | B. $x + 12$ cm |
| C. $4x + 12$ cm | D. $x + 3$ cm |
-

15. Geometry and measurement

Two parallel lines are crossed by a transversal. One acute angle is 68 degrees. What is an adjacent obtuse angle?

- | | |
|-----------------------|-----------------------|
| A. 102 degrees | B. 112 degrees |
| C. 122 degrees | D. 68 degrees |
-

Timed mini-mock (continued)

16. Data and reasoning

A cyclist rides 18 km in 45 minutes at constant speed. How far in 2 hours?

A. 36 km

B. 42 km

C. 48 km

D. 54 km

Answers and explanations

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

1. A - 3

Multiply first: $5 \times 3 = 15$; then $-12 + 15 = 3$.

2. A - 7

Add 7 to get $4x = 28$, then divide by 4: $x = 7$.

3. C - 65 degrees

$180 - 42 - 73 = 65$ degrees.

4. A - 15

There are 8 ratio parts, each worth 5 marbles; red is $3 \times 5 = 15$.

5. D - $-2/3$

Among negative values, the one closest to zero is greatest; $-2/3$ is closest.

6. D - $10a - 15$

Distribute 3 to get $6a - 15$; adding $4a$ gives $10a - 15$.

7. D - 44 cm

Circumference = $2 \pi r = 2 \times 22/7 \times 7 = 44$ cm.

8. A - $2/5$

There are 4 white out of 10 total, so $4/10$ simplifies to $2/5$.

9. C - -11 m

$-18 + 7 = -11$ m, still below sea level.

Answers and explanations (continued)

10. B - 280 rupees

Each costs 35 rupees; $8 \times 35 = 280$ rupees.

11. C - 120 cm^3

Volume = $6 \times 4 \times 5 = 120 \text{ cm}^3$.

12. B - 14

The total must be 48; $48 - 9 - 11 - 14 = 14$.

13. B - -10 degrees

After 3 hours the temperature is $8 - 18 = -10$ degrees.

14. D - $x + 3 \text{ cm}$

Divide perimeter by 4: $(4x + 12)/4 = x + 3 \text{ cm}$.

15. B - 112 degrees

Adjacent angles on a straight line sum to 180 degrees; $180 - 68 = 112$.

16. C - 48 km

18 km per 0.75 h is 24 km/h; in 2 h the cyclist travels 48 km.

Topic scope checked against SOF syllabus: [SOF IMO Class 7 syllabus](#)