

Mathematics Admissions Exam

Learning Outcomes and Sample Questions

Subject	Mathematics		
Grade of Entry	8		
Admission Year	AY 2023-2024		
Exam Specifications	Number of Questions	20	(5 marks each question)
	Type of Questions	Multiple Choice	(with 4 Options)
	Exam Duration	45 minutes	
	Calculators	Not Allowed	
	Language	Questions are written both in English and Arabic	

Learning Outcomes Tested for Entry to Grade 8: Mathematics

The Mathematics part of the Admissions exam is made up of questions that are derived from the below learning Outcomes:

1. Find volume of rectangular, triangular prisms, and pyramids
2. Use vertical and adjacent angles to write and solve equations to find unknown variables and angle measures
3. Use complementary and supplementary angles to write and solve equations to find unknown variables and angle measures
4. Use the sum of measures of the angles in a triangle is 180 degrees to write and solve equations to find unknown variables and angle measures
5. Understand all the different types of triangles
6. Solve one-step linear equations using addition, subtraction, multiplication, or division
7. Write a one-step linear equation to reflect a real-life problem and solve for the unknown
8. Solve two-step linear equations using addition, subtraction, multiplication, or division
9. Write a two-step linear equation to reflect a real-life problem and solve for the unknown
10. Add, subtract, multiply, and divide mixed numbers and fractions with like and unlike denominators
11. Understand the absolute value of a number
 - Absolute value of -5 written as $|-5| = 5$ and absolute value of 5 written as $|5| = 5$
 - Evaluate numerical expressions involving absolute value
12. Use different operations to evaluate numerical expressions (Understand the order of operations)
13. Find the mean (average), median, mode, and range of a set of numbers
14. Solve one step linear inequalities and write the solution on a number line
15. Simplify Algebraic expressions
16. Relate percentages, fractions, and decimals
17. Find percent of a number, estimate percent of a number, and find the whole
18. Calculate percent of change, tax, and discount
19. Solve real-life problems involving percentages
20. Solve problems involving proportional relationships (Identify the constant of proportionality)
21. Reason to find the number of different ways for certain outcome to happen
 - Extend to the fundamental counting principle

Sample Questions for Entry to Grade 8: Mathematics

All questions in the exam will be translated in Arabic as in Question 1 below.
Q2-Q10 in this sample set are only in English for practice.

1. What is the second step to solve this equation:

ما الخطوة الثانية لحل المعادلة التالية:

$$14 + 2x = 44$$

- A. Add 2 to both sides
- B. Subtract 14 from both sides
- C. Add 14 to both sides
- ✓ D. Divide by 2 on both sides

2. If you multiply a number by 4 and then subtract 3, you will get 37. What is the number?

- A. 5
- ✓ B. 10
- C. 15
- D. 20

3. Evaluate the numerical expression $3\frac{1}{2} + 1\frac{3}{4}$.

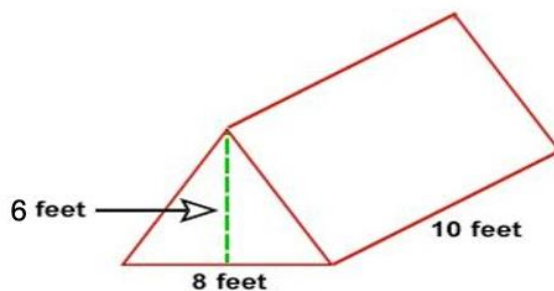
- A. $5\frac{3}{4}$
- ✓ B. $5\frac{1}{4}$
- C. $4\frac{1}{2}$
- D. $5\frac{1}{2}$

4. What is the value of $|2 - 4| - |-3| + |5|$?

- A. -4
- ✓ B. 4
- C. 5
- D. 6

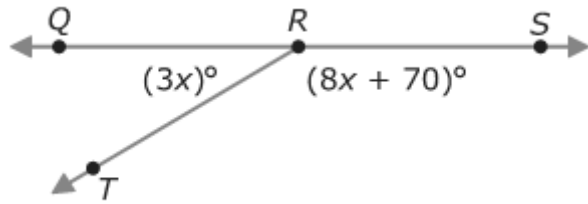
5. The volume of the triangular prism shown below is _____.

- A. $560ft^3$
- ✓ B. $240ft^3$
- C. $480ft^3$
- D. $260ft^3$



6. What is the measure of angle QRT in degrees?

- A. 10
- ✓ B. 30
- C. 42
- D. 48



7. Given the set of numbers: 14, 3, 4, 8, 10, 3, 5, 9. Find the mean, median, and mode.

- ✓ A. Mean = 7, Median = 6.5, Mode = 3
- B. Mean = 8, Median = 6, Mode = 3
- C. Mean = 7, Median = 5, Mode = 3
- D. Mean = 6, Median = 6.5, Mode = 3

8. Simplify the following expression:

$$-2(x - 2) - 6(x - 1)$$

- A. $-8x + 8$
- B. $-6x - 10$
- C. $-8x - 10$
- ✓ D. $-8x + 10$

9. What is 60% of 40?

- A. 21
- ✓ B. 24
- C. 25
- D. 18

10. A sweater initially costing AED160 is on sale for 15% off.
How much should you pay for the sweater?

- A. AED 130
- ✓ B. AED 136
- C. AED 140
- D. AED 142