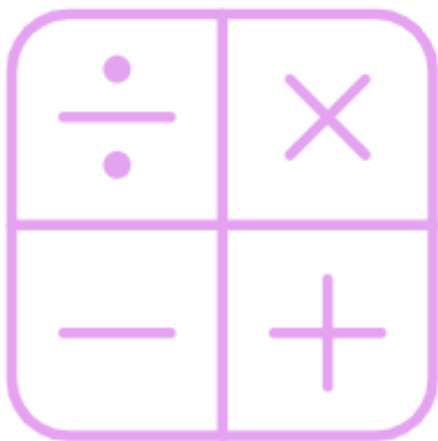


The ACER Advance Awards for Schools



Numeracy

Sample Questions & Marking Guide

Summary

The ACER Advance Awards for Schools consists of two challenges, one in Literacy and one in Numeracy.

The Numeracy assessment contains 50 questions with a difficulty level intended to engage and challenge high-ability students. Students will have 45 minutes to complete the Numeracy assessment.

The sample questions included here represent a typical range of questions in the Numeracy component of the Advance Awards. The page following the sample materials shows the marking guide for each of the questions.

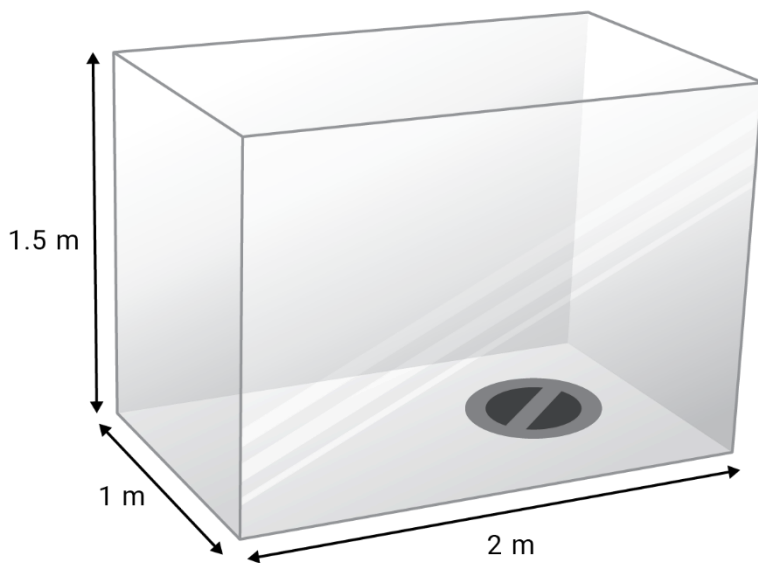
Sample Questions

Question 1

This tank is in the shape of a rectangular prism. It is full of water.

The tank has a base with dimensions 1 m \times 2 m and height 1.5 m

..



A plug is removed from the bottom of the tank and water drains at a constant rate of 20 litres per minute.

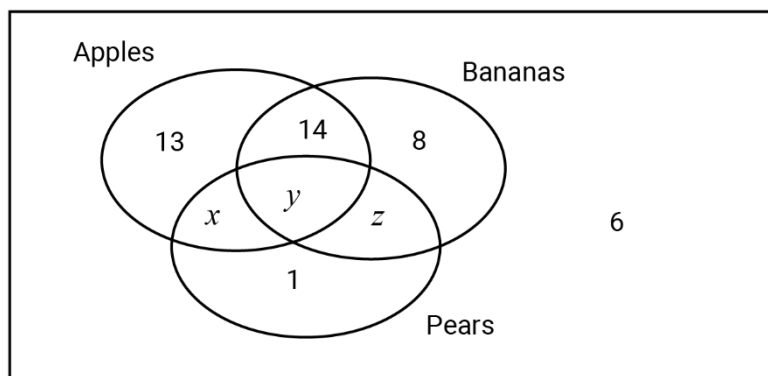
1 m³ = 1000 L

How much time does it take for the tank to completely empty?

- A. 1.5 hours
- B. 2 hours
- C. 2.5 hours
- D. 3 hours

Question 2

In a recent survey of 58 Year 8 students, 38 liked apples, 31 liked bananas and 17 liked pears. A Venn diagram for the survey responses is shown below.



How many students liked all three (apples, bananas and pears)?

- A. seven
- B. six
- C. five
- D. four

Question 3

In a certain code, represents 126

and represents 908.

Using the same code, represents

A 357

B 375

C 457

D 473

Question 4

Ahmed, Ella, Max and Shriya were in the top four places in their school's mathematics competition in Years 7, 8 and 9.

No student was in the same place for more than one year.

	First place	Second place	Third place
Year 7	Ella	Shriya	Max
Year 8	Max	Ella	Ahmed

In Year 9, Shriya was in a higher place than Ahmed and Ahmed was in a higher place than Max.
Which student was in third place in Year 9?

A Shriya

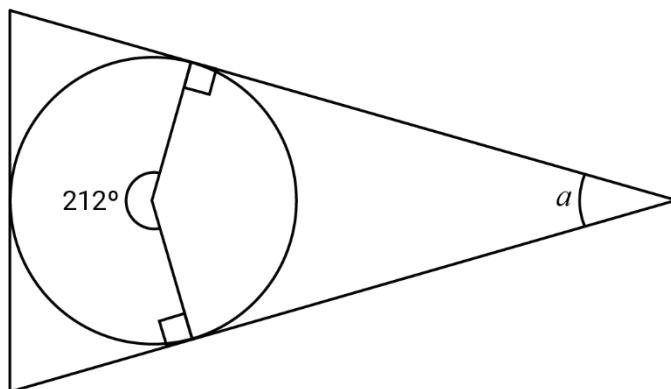
B Max

C Ella

D Ahmed

Question 5

What is the size of angle a ?



A. 16°

B. 32°

C. 45°

D. 74°

Question 6

What is the value of x in this equation?

$$\frac{0.7x - 0.12}{0.2} + 0.8 = 3$$

- A. 8
- B. 1.2
- C. 0.8
- D. 0.12

Question 7

$$\star \times \star \times \triangle = \uparrow \text{ and } \triangle \times \star = \heartsuit$$

Which one of the following is true?

- A $\uparrow = \star \div \heartsuit$ B $\heartsuit = \uparrow \div \star$
- C $\uparrow = \heartsuit \div \star$ D $\heartsuit = \uparrow \div \triangle$

Marking Guide

Question	Key	Answer
1	C	2.5 hours
2	D	four
3	B	375
4	C	Ella
5	B	32°
6	C	0.8
7	B	heart, arrow, star