

Practice Test

All Topics

Year 7 Mathematics

Topics Included:

- Number and Integers
- Algebra
- Percentages and Financial Maths
- Geometry
- Probability
- Time and Rates

Name:



VERTEX
MATHEMATICS

Section I

10 marks

Attempt Questions 1–10

Allow about 15 minutes for this section

- 1 Consider the following numbers, find the smallest number:

$1\frac{2}{5}$	-3	$\frac{60}{12}$	2^2
----------------	------	-----------------	-------

- (A) $1\frac{2}{5}$ (B) -3 (C) $60/12$ (D) 2^2
- 2 Evaluate the following expression: $2 - 12 \div (-3) + (-5) \times 2 - (-7)$.
 (A) -11 (B) 1 (C) 13 (D) -3
- 3 If $x = -2$ and $y = 5$ simplify the expression and then find its value: $3x^2 - 4y + 2x$
 (A) -12 (B) -4 (C) -16 (D) 12
- 4 A jacket originally priced at \$120 is on sale for 15% off. After the discount, a further 10% is taken off the sale price for a member's discount. What is the final price?
 (A) 90 (B) 91.80 (C) 102 (D) 93.60
- 5 Solve the equation: $3x + 7 = 5x - 3$
 (A) $x = 5$
 (B) $x = 2$
 (C) $x = -5$
 (D) $x = 4$
- 6 In an isosceles triangle, the unequal angle is 40° . What is the size of one of the equal base angles?
 (A) 40° (B) 140° (C) 70° (D) 60°

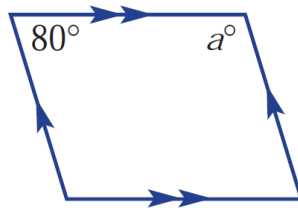
- 7** A bag contains 5 red marbles, 3 blue marbles, and 2 green marbles. If one marble is picked at random, what is the probability (as a percentage) that it is not blue?

(A) 30% (B) 70% (C) 80% (D) 50%

- 8** A rectangular prism has a length of 6cm , a width of 2cm , and a height of 5cm . What is its total surface area?

(A) $60cm^2$
 (B) $104cm^2$
 (C) $52cm^2$
 (D) $84cm^2$

- 9** In the diagram below find the value of angle a°



(A) 20° (B) 80° (C) 110° (D) 100°

- 10** A train departs at 22:45 and arrives at its destination at 03:15 the next morning. How long was the journey?

(A) 4 hours and 30 minutes
 (B) 5 hours and 30 minutes
 (C) 4 hours and 15 minutes
 (D) 5 hours and 45 minutes

Section II

32 marks

Attempt Questions 11–17

Allow about 60 minutes for this section

Answer each question. Show all relevant mathematical reasoning.

Question 11 (6 marks)

- (a) The hair on a person's head grows about 5cm every four months. **2**

If you used a miracle hair solution that tripled the rate of hair growth, how many centimeters would your hair grow in 5 years?

- (b) Some notebooks are marked down from \$6.99 a pack to \$4.65 a pack. **2**

Find the percentage reduction, correct to two decimal places.

- (c) If a coin and a die are rolled, what is the probability of tossing a tail and rolling a number more than 5? **2**

Question 12 (4 marks)

Sarah is planning a budget for her birthday party. She spends $\frac{2}{5}$ of her money on food and 30% of her money on decorations.

- (a) What fraction of her money is left for activities?. **2**

- (b) If Sarah had \$200 to start with, calculate the exact dollar amount she has left. **2**

Question 13 (7 marks)

A taxi company charges a \$2.70 flag fall. An additional \$1.87 per km is charged for the journey

- (a) Calculate the cost of a 4.6 km journey **2**

- (b) If the journey cost \$111.16, how far was the journey? **2**

Question 14 (3 Marks)

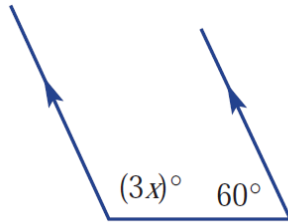
On a flight to Europe, Janelle spends 8 hours and 36 minutes on a flight from Melbourne to Kuala Lumpur, Malaysia, 2 hours and 20 minutes at the airport at Kuala Lumpur, and then 12 hours and 19 minutes on a flight to Geneva, Switzerland. **3**

- (a) What is Janelle's total travel time?

Question 15 (6 marks)

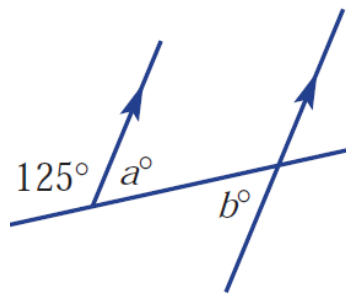
- (a) Find the value of a° . Provide reasoning as well.

2



- (b) Find the value of a° and b° . Ensure that proper working out and reasoning is shown

3



Question 16 (6 marks)

- (a) Simplify the following expression by grouping like terms: $7m + 4k - 2 - 3m + 8k + 10$
- (b) Expand and simplify the following: $3(2x + 5) + 2(x - 4)$
- (c) If $x = 2$, substitute this value into your simplified expression from part (b) to find the final value.

2

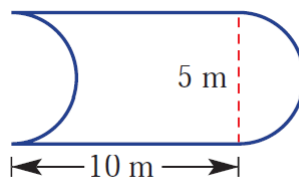
2

2

Question 17 (3 marks)

Calculate the perimeter of this shape, correct to two decimal points.

3



END OF EXAM

Nice work completing the test :)

Get your test marked for free!

Email clear photos or a PDF of your working to:

vertexmathematicsnsw@gmail.com.

We'll review it and send you written feedback.

Note: Please include your year level and which exam it is.

Want a personalised study plan?

Book a free consultation session and we'll:

- Review your results
- Identify key gaps
- Recommend next steps

Book a FREE
consultation today!

