

Foundations of Advanced Mathematics  
**AS Core Mathematics Bridging Test 6**

**Questions**

- 1 Three of the following statements are true and **one** is false. Which one is **false**?
- A 234.611 correct to the nearest integer is 235.
  - B 10 100 correct to the nearest thousand is 10 000.
  - C 0.003672 correct to 3 significant figures is 0.004.
  - D 2.0099 correct to 1 decimal place is 2.0.
- 2 Three of the following statements are true and **one** is false. Which one is **false**?
- A  $(-3) \times (-4) = 12$
  - B  $(-12)^2 = 144$
  - C  $(-4) - (-5) = -9$
  - D  $2^3 \times 2^4 = 2^7$
- 3 Three of the following statements are true and **one** is false. Which one is **false**?
- A 48 is a factor of 144.
  - B 91 is a prime number.
  - C The lowest common multiple (LCM) of 24 and 40 is 120.
  - D The highest common factor (HCF) of 24 and 40 is 8.

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- 4 The formula for converting degrees Celsius to degrees Fahrenheit is

$$F = \frac{9}{5}C + 32.$$

Three of the following methods for calculating  $F$  are correct and **one** is wrong. Which one is **wrong**?

- A Multiply  $C$  by 9, divide by 5 and add 32.
- B Multiply  $C$  by 1.8 and add 32.
- C Multiply  $C$  by 9, then add 160 and divide the result by 5.
- D Add 32 to  $C$  and then multiply the result by 1.8.
- 5 Which **one** of the following expressions can be correctly simplified to  $\frac{x+1}{12}$ ?

A  $\frac{x+2}{24}$

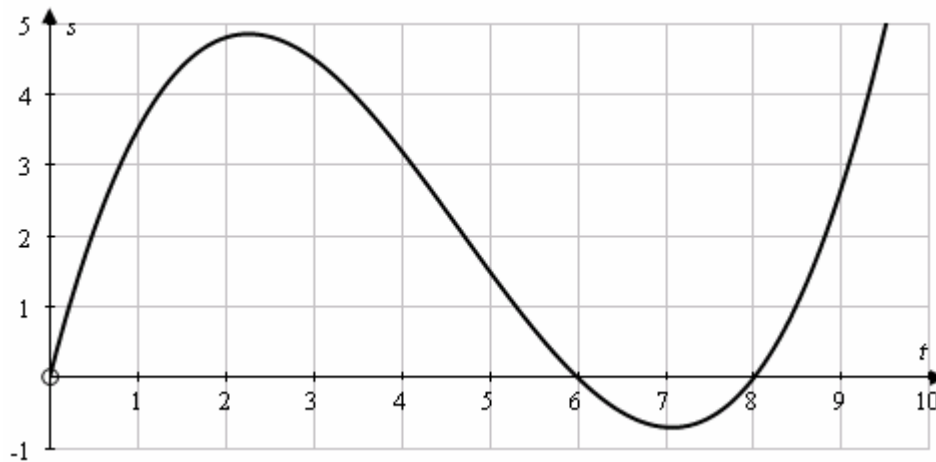
B  $\frac{x+3}{15} - \frac{2}{3}$

C  $\frac{5-x}{24} + \frac{x-1}{8}$

D  $\frac{x}{2} + \frac{1}{6}$

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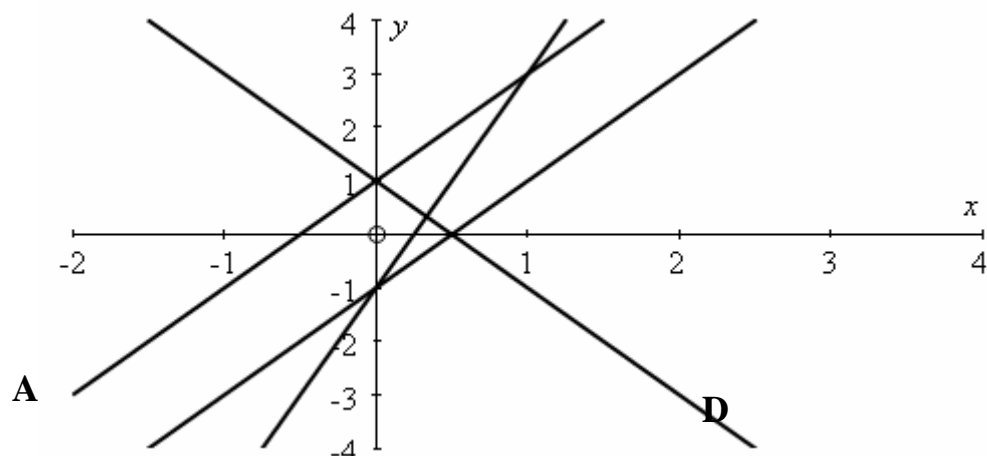
- 6 A particle moves along a straight line. The graph shows the displacement,  $s$  metres, of the particle from the starting point,  $O$ , after  $t$  seconds.



Three of the following statements are true and **one** is false. Which one is **false**?

- A** The displacement when  $t = 4$  is approximately 3 metres.  
**B** The particle is stationary when  $t = 6$ .  
**C** The velocity of the particle when  $t = 1$  is approximately 2.5 metres per second.  
**D** The least value of  $s$  is approximately  $-0.7$  m.

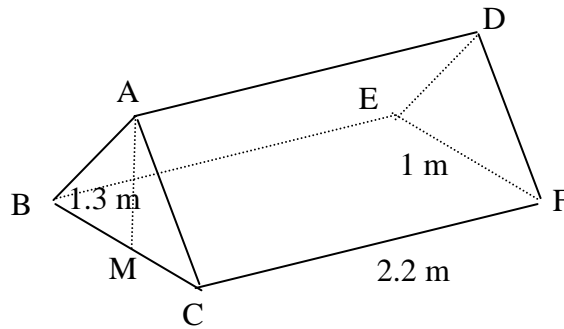
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Which **one** of the lines **A**, **B**, **C** or **D** represents  $y = 2x + 1$ ?

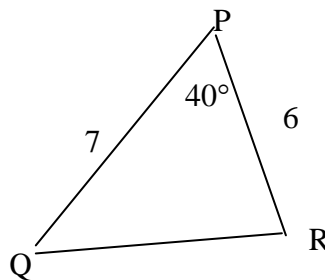
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- 8 The diagram shows a tent which has the shape of a prism. The two vertical ends, ABC and DEF, are isosceles triangles with equal sides AB, AC, DE and DF. The base CBEF is a rectangle. BC = EF = 1 metre and CF = BE = AD = 2.2 metres. M is the mid-point of the side BC and the height of the tent, AM, is 1.3 metres.



Three of the following statements are true and **one** is false. Which one is **false**?

- A The angle ABC is  $69^\circ$ , correct to the nearest degree.
  - B  $DM = 2.56$  m, correct to 2 decimal places.
  - C The ground area of the tent is  $4.84 \text{ m}^2$ .
  - D The volume of the tent is  $1.43 \text{ m}^3$ .
- 9 In the triangle PQR,  $PQ = 7$  cm,  $PR = 6$  cm and angle  $QPR = 40^\circ$ .



Three of the following statements are true and **one** is false. Which one is **false**?

- A  $QR = 4.54$  cm, correct to 2 decimal places.
- B Angle  $Q = 58^\circ$ , correct to the nearest degree.
- C Angle  $R = 82^\circ$ , correct to the nearest degree.
- D P is approximately 6.5 cm from QR.

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10 Three of the following statements are true and **one** is false. Which one is **false**?

A  $(x+1)(x+2) = x^2 + 3x + 2$

B  $(x-1)(x-2) = x^2 - 3x + 2$

C  $(x-2)(x+2) = x^2 - 4$

D  $(x-1)^2 = x^2 - 1$