

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

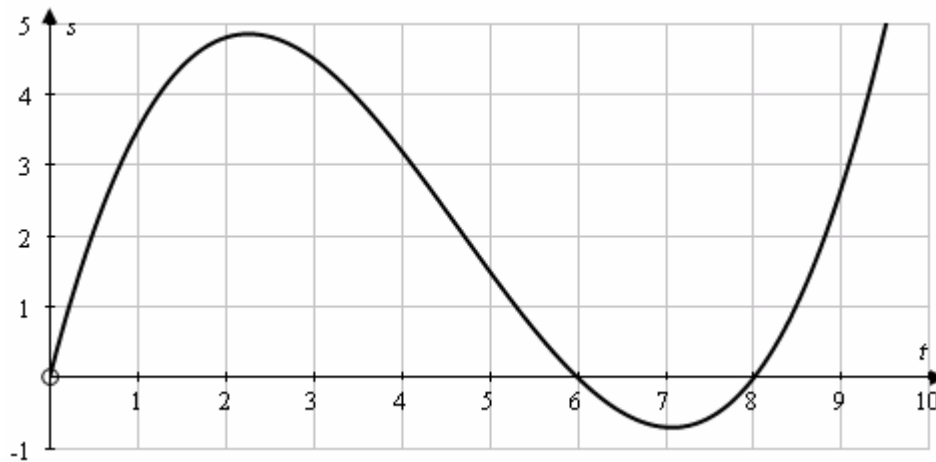
B $\frac{x+3}{15} - \frac{2}{3}$

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

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

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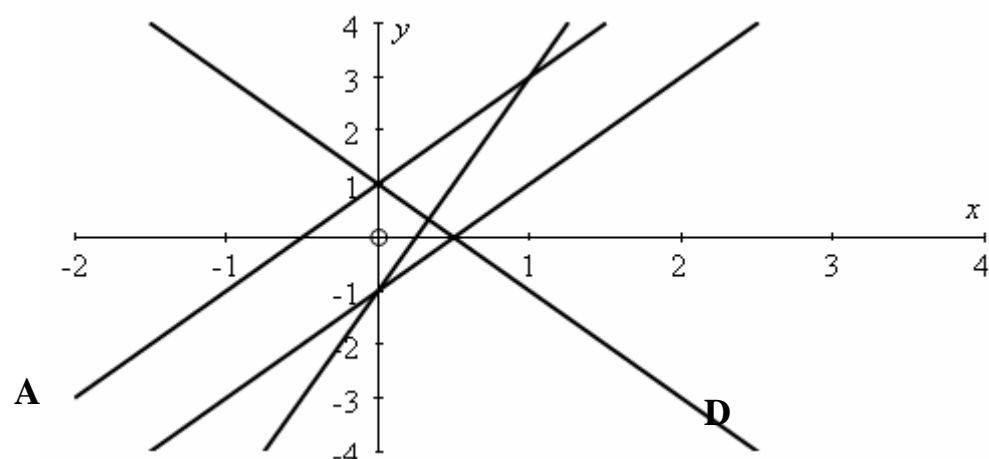
- 6 A particle moves along a straight line. The graph shows the displacement, s metres, of the particle from the starting point, O , after t seconds.



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.

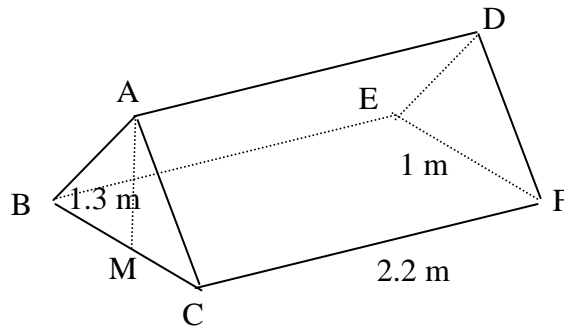
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Which **one** of the lines **A**, **B**, **C** or **D** represents $y = 2x + 1$?

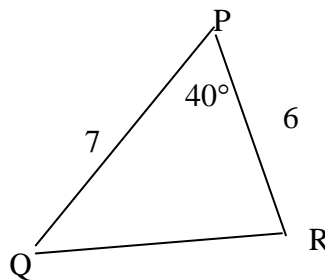
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- 8 The diagram shows a tent which has the shape of a prism. The two vertical ends, ABC and DEF, are isosceles triangles with equal sides AB, AC, DE and DF. The base CBEF is a rectangle. BC = EF = 1 metre and CF = BE = AD = 2.2 metres. M is the mid-point 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° , 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 m².
 - D The volume of the tent is 1.43 m³.
- 9 In the triangle PQR, PQ = 7 cm, PR = 6 cm and angle QPR = 40° .



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° , correct to the nearest degree.
- C Angle R = 82° , 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 $(x-1)^2 = x^2 - 1$