AMAIS Sample Questions

AMAIS is a test that assesses the mathematical knowledge of students and has been developed to assist with the placement of students into appropriate mathematics streams at pre-tertiary and tertiary level.

The following are examples of some types of question that might be found in a AMAIS test. Note that these are examples only and the actual questions in a AMAIS test may vary in style and content.

Australian Council for Educational Research

Question 1 *(fundamental level)*

The formula $F = \frac{9}{5}C + 32$ converts temperatures from degrees Centigrade (^{o}C) to degrees Fahrenheit (^{o}F).
Which of these shows the correct formula to convert from ^{o}F to ^{o}C?

A: $C = F - (32 \times \frac{5}{9})$

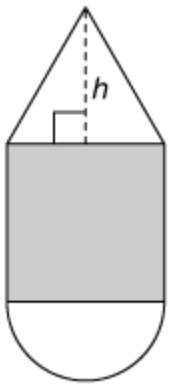
B: $C = \frac{5}{9}(F - 32)$

C: $C = \frac{5F - 32}{9}$

D: $C = \frac{F - 160}{9}$

Question 2 *(fundamental level)*

The shaded square has sides $20\ \text{cm}$ long.
There is a semicircle at one end and an isosceles triangle at the other end.
The semicircle and triangle have the same area.



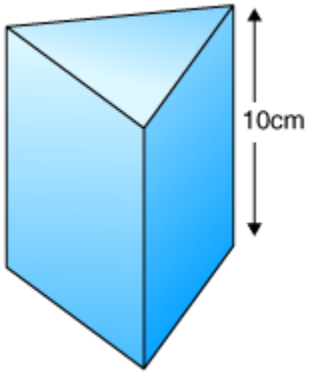
(not to scale)

What is the height *h* of the triangle in centimetres?

A: 10
B: 20
C: 5π
D: 50π

Question 3 *(Intermediate level)*

This triangular prism is 10 centimetres high.
The area of each triangular face is 40 square centimetres.



What is the volume of the prism?

☐ cubic centimetres

Question 4 *(Advanced level)*

Two points on a linear graph are $A(x, 3x + 1)$ and $B(x + 6, 3x + 19)$. M is the midpoint of AB.

What are the co-ordinates of point M?

A: $(3x + 10, x + 3)$
B: $(2x + ½, 2x + 12½)$
C: $(x + 3, 3x + 10)$
D: $(2x + 6, 6x + 20)$

Question 5 *(Intermediate level)*

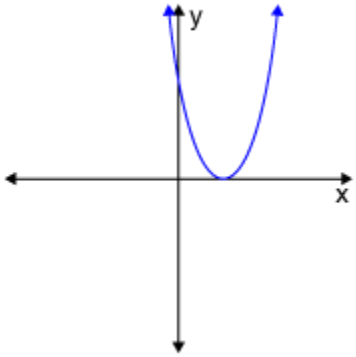
A straight line graph has a gradient of $\frac{2}{5}$ and goes through the point (-1, 2).

What is the equation of this line?

A: $2x-5y+12=0$
B: $2x-5y+6=0$
C: $2x-5y+9=0$
D: $2x+5y-8=0$

Question 6 *(Intermediate level)*

The *X*-axis is a **tangent** to the parabola $y = x^2 - 6x + c$.



What is the value of *c*?

Question 7 *(Advanced level)*

A circle has a diameter of 10 units and a centre at (2, –1).

What is the equation of the circle?

A: $(x-2)^2 + (y+1)^2 = 25$
B: $(x+2)^2 + (y-1)^2 = 25$
C: $(x-2)^2 + (y+1)^2 = 100$
D: $(x+2)^2 + (y-1)^2 = 100$

Answers

1	B
2	C
3	400
4	C
5	A
6	9
7	A