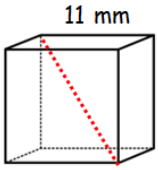
Name:	Date:
Question 1:  A carton of milk is on special offer and contains 825 millilitres. This is 10% more than the standard carton. How much does the standard carton hold? 	APP 1·3a Bronze Outcome 1
Question 2:  For this cube, calculate the length of the space diagonal. 	REL 1·4a Silver Outcome 1
Question 3: Express $x^2 + 2x + 9$ in the form $(x + p)^2 + q$.	E+F 1·2c Bronze Outcome 1
Question 4: Write down the gradient and the y-intercept of the straight line with the following equation; $7x - 5y + 5 = 0$	REL 1·1a Gold Outcome 1
Question 5: Solve the following equation; $\frac{x+5}{3} + \frac{x-2}{9} = 4$	REL 1·1c Gold Outcome 1
My score:	

Exam Questions

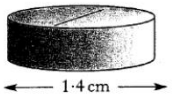
Question 1:

E+F 1·4c Bronze Outcome 3
E+F 1·4c Gold Outcome 1

A pharmaceutical company makes vitamin pills in the shape of spheres of radius 0·5 centimetres.

(a) Calculate the volume of **one** pill.
Give your answer correct to two significant figures. **3**

The company decides to change the shape of each pill to a cylinder.



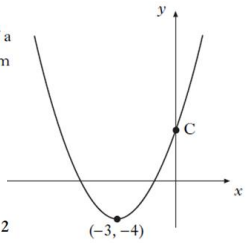
(b) The new pill has the **same** volume as the original and its diameter is 1·4 centimetres.
Calculate the height of the new pill. **3**

Question 2:

E+F 1·2a Bronze Outcome 1

The diagram below shows part of a parabola with equation of the form

$y = (x + a)^2 + b$.



(a) Write down the equation of the axis of symmetry of the graph. **1**

(b) Write down the equation of the parabola. **2**

(c) Find the coordinates of C. **2**

Question 3:

REL 1·1d Gold Outcome 1

(a) Brian, Molly and their four children visit Waterworld.
The total cost of their tickets is £56.

Let a pounds be the cost of an adult's ticket and c pounds the cost of a child's ticket.
Write down an equation in terms of a and c to illustrate this information. **1**

(b) Sarah and her three children visit Waterworld.
The total cost of their tickets is £36.
Write down another equation in terms of a and c to illustrate this information. **1**

(c) (i) Calculate the cost of a child's ticket. **2**

(ii) Calculate the cost of an adult's ticket. **1**

Question 4:

REL 1·5a Bronze Outcome 1

Solve the equation

$7\cos x° - 5 = 0, \quad 0 \leq x < 360.$ **3**

Question 5:

REL 1·1b Gold Outcome 2

Two functions are given below.

$f(x) = x^2 - 4x$

$g(x) = 2x + 7$

(a) If $f(x) = g(x)$, show that $x^2 - 6x - 7 = 0$. **2**

(b) Hence find **algebraically** the values of x for which $f(x) = g(x)$. **2**

My score: