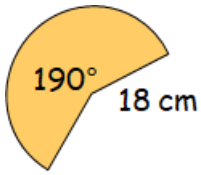
Name:	Date:
Question 1: Solve **algebraically** the system of equations; $5x + 2y = 2$ $9x + 4y = 2$	REL 1·1d Gold Outcome 1
Question 2: Change the subject of the formula to r. $e = 9r^2 + 1$	REL 1·1e Silver Outcome 2
Question 3: Calculate the length of the major arc below with radius 18 centimetres.  	E+F 1·4b Silver Outcome 1
Question 4: Express $x^2 + 2x - 5$ in the form $(x + p)^2 + q$.	E+F 1·2c Bronze Outcome 1
Question 5: Calculate the semi-interquartile range for the following data set. 3, 5, 7, 8, 9, 12, 14, 15	REL 1·4 Gold Outcome 1
My score:	

Exam Questions

Question 1:

E+F 1·2b Silver Outcome 2

Factorise $x^2 - 4x - 21$. 2

Question 2:

You're on your own!

Due to the threat of global warming, scientists recommended in 2010 that the emissions of greenhouse gases should be reduced by 50% by the year 2050.

The government decided to reduce the emissions of greenhouse gases by 15% **every ten years**, starting in the year 2010.

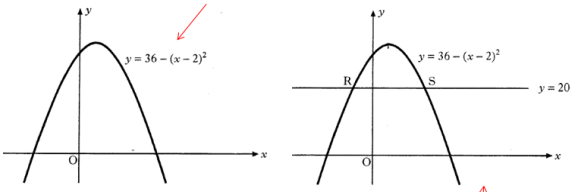
Will the scientists' recommendations have been achieved by 2050?

You must give a reason for your answer. 4

Question 3:

REL 1·2 Silver Outcome 3

The diagram below shows part of the graph of $y = 36 - (x - 2)^2$.



(*a*) State the coordinates of the maximum turning point. 2

(*b*) State the equation of the axis of symmetry. 1

The line $y = 20$ is drawn.
It cuts the graph of $y = 36 - (x - 2)^2$ at R and S as shown below.

(*c*) S is the point (6, 20). Find the coordinates of R. 2

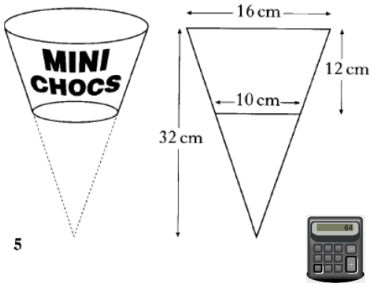
Question 4:

E+F 1·4c Silver Outcome 2

A container to hold chocolates is in the shape of part of a cone with dimensions as shown below.

Calculate the volume of the container.

Give your answer correct to one significant figure. 5



Question 5:

REL 1·1b Silver Outcome 1

Given that $f(x) = 4 - x^2$,
evaluate $f(-3)$. 2

My score: