

'Graphing Global Sea Level Rise'

a) Roughly $y = 3.14x + 22.3$
(gradient = m, y intercept = c) (3)

b) Units for m: mm/year (gradient) (1)
Units for c: mm (remember y is in mm, so c must also be in mm)

c) In 50 years time:
Let $x = 50$ $y = 3.14(50) + 22.3$
 $= 179.3$ mm
In 100 years time:
Let $x = 100$ $y = 3.14(100) + 22.3$
 336.3 mm (2)

d) x is in years, so x^2 means that the units will be years ² (1)

e) In 50 years – let $x = 50$ $y = 0.05(50)^2 + 2.6(50) + 21.3$
 $= 276.3$
In 100 years – let $x = 100$ $y = 0.05(100)^2 + 2.6(100) + 21.3$
 $= 781.3$ (2)

f) They are much higher when using the quadratic equation than they are for the linear equation, and the larger the value of x (number of years) the larger the gap between the two equations is. (1)