MTH 3-15b Homework 5 Gold Level

Outcome 1 - Formulae in Science

Evaluate the following scientific formulae…

1 The distance, S metres, travelled by a falling object in t seconds is given by the formula

$$S = \frac{1}{2}gt^2$$

Calculate the value of S when g = 15·2 and t = 14.

2 The formula to calculate energy, E, is

$$E = mc^2$$

where m is the mass and c is the speed of light.

Calculate the value of E when m = 53 and c = 300 000 000.

3 The velocity, v metres per second, at the top of a loop in a roller coaster is given by the formula

$$v = \sqrt{gr}$$

where r metres is the radius of the loop.
Calculate the value of v when g = 16·04 and r = 12.

4 The current, I, is calculated by the formula

$$I = \sqrt{\frac{P}{R}}$$

where P is the power and R is the resistance.

Find the current, I, when there is a power of 59 and a resistance of 6.