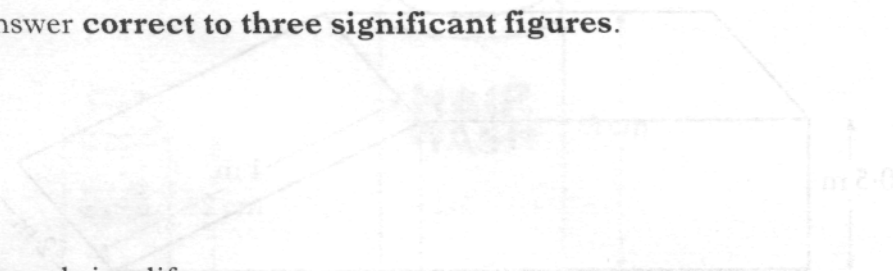


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1. It is estimated that an iceberg weighs 84 000 tonnes.
As the iceberg moves into warmer water, its weight decreases by 25% each day.

What will the iceberg weigh after 3 days in the warmer water?

Give your answer **correct to three significant figures**.



2. Expand fully and simplify

$$x(x - 1)^2.$$

3. A machine is used to put drawing pins into boxes.

A sample of 8 boxes is taken and the number of drawing pins in each is counted.

The results are shown below:

102 102 101 98 99 101 103 102

- (a) Calculate the mean and standard deviation of this sample.

- (b) A sample of 8 boxes is taken from another machine.

This sample has a mean of 103 and a standard deviation of 2.1.

Write down two valid comparisons between the samples.

4. Use the quadratic formula to solve the equation,

$$3x^2 + 5x - 7 = 0.$$

Give your answers correct to **1 decimal place**.

[Turn over