

## APPLICATIONS HOMEWORK 1

### Non Calculator:

Evaluate

$$\frac{2}{5} \div 1\frac{1}{10}.$$

### Calculator:

Standard deviation:  $s = \sqrt{\frac{\sum(x - \bar{x})^2}{n-1}} = \sqrt{\frac{\sum x^2 - (\sum x)^2/n}{n-1}}$ , where  $n$  is the sample size.

A gardener grows tomatoes in his greenhouse.

The temperature of the greenhouse, in degrees Celsius, is recorded every day at noon for one week.

17   22   25   16   21   16   16

(a) For the given temperatures, calculate:

(i) the mean;

1

(ii) the standard deviation.

3

Show clearly all your working.

For best growth, the mean temperature should be  $(20 \pm 5)^\circ\text{C}$  and the standard deviation should be less than  $5^\circ\text{C}$ .

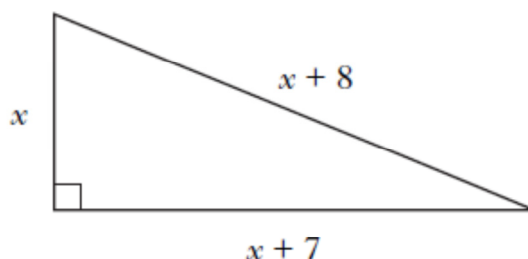
(b) Are the conditions in the greenhouse likely to result in best growth?

Explain clearly your answer.

2

### Challenge Question:

A right-angled triangle has dimensions, in centimetres, as shown.



Calculate the value of  $x$ .