

Free-Standing Mathematics Qualification Higher Level June 2015

## **Algebra and Graphs**

4988/PM

Unit 8

## **Preliminary Material**

# **Data Sheet**

To be opened and issued to candidates between Tuesday 21 April 2015 and Tuesday 5 May 2015

## **REMINDER TO CANDIDATES**

YOU MUST **NOT** BRING THIS DATA SHEET WITH YOU WHEN YOU SIT THE EXAMINATION. A CLEAN COPY WILL BE MADE AVAILABLE.

#### Information

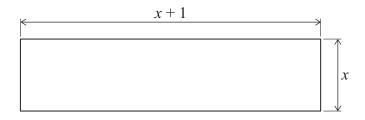
The Preliminary Material is to be seen by teachers and candidates **only**, for use during preparation for the examination on Tuesday 12 May 2015. It **cannot** be used by anyone else for any other purpose, other than as stated in the instructions issued, until after the examination date has passed. It must **not** be provided to third parties.

# 4988/PM

#### Bathroom tiles

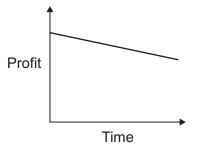
The diagram below shows an example of a tile with measurements in terms of x.

The measurements are in metres.



#### Company profit

Companies often use graphs to illustrate the profit they make over a period of time.



The graph above shows that this company's profit decreased at a constant rate over a period of time.

## Keeping fish

Three friends, Ahmed, Brent and Cassie, each have a fish tank where they keep guppies and rainbow fish.

They each follow the same advice regarding the number of gallons of water needed in a tank to keep the fish healthy.

The table below shows the number of fish in Ahmed's tank and the number of gallons of water needed.

| Name  | Number of | Number of    | Number of gallons |
|-------|-----------|--------------|-------------------|
|       | guppies   | rainbow fish | of water in tank  |
| Ahmed | 3         | 4            | 24                |



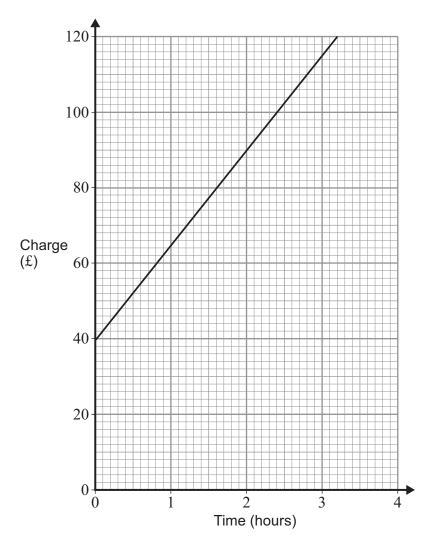
Turn over

#### Heartbeats

A study of the human body claims that the human heart beats between  $90\ 000$  and  $110\ 000$  times a day and beats between 2.9 and 3.1 billion times in a person's lifetime.

## Tradesmen

The labour charge for a plumber for each job is illustrated in the graph below.



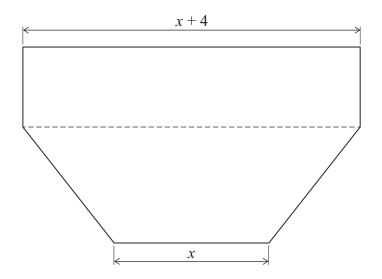
The labour charge is made up of a fixed call-out fee plus an amount for the time the job lasts. This second amount is based on a rate-per-hour.

### Patios

The diagram below shows the plan of a patio. The hexagonal area is made up of a rectangle and a trapezium.

Two of the measurements are shown.

All measurements are in metres.



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