1   The width of a photo frame is measured as 22.5 cm correct to the nearest millimetre. What is the percentage error in this calculation?   **1**

2   Louis bought a pair of sneakers for $90. The cost of sneakers is expected to increase by 3.5% each year. How much could Louis expect to pay for the same pair of sneakers in 7 year's time? Give your answer correct to the nearest dollar.   **2**

3

Taxable income	Tax payable
$0 – $12 000	Nil
$12 001 – $30 000	Nil plus 30 cents for each $1 over $12 000
$30 001 – $45 000	$5400 plus 40 cents for each $1 over $30 000
$45 001 – $60 000	$11 400 plus 50 cents for each $1 over $45 000
over $60 000	$18 900 plus 55 cents for each $1 over $60 000

Using the tax table, what is the tax payable on $37 500?   **2**

4   What is $7x^0 - 5x$ in its simplest form?   **1**

5   Georgia owes her parents $3000. She will pay them back by paying A immediately and B every month until she has paid the loan in full. After 12 months, Georgia has paid back $800, and after 20 months, she has paid back $1200.

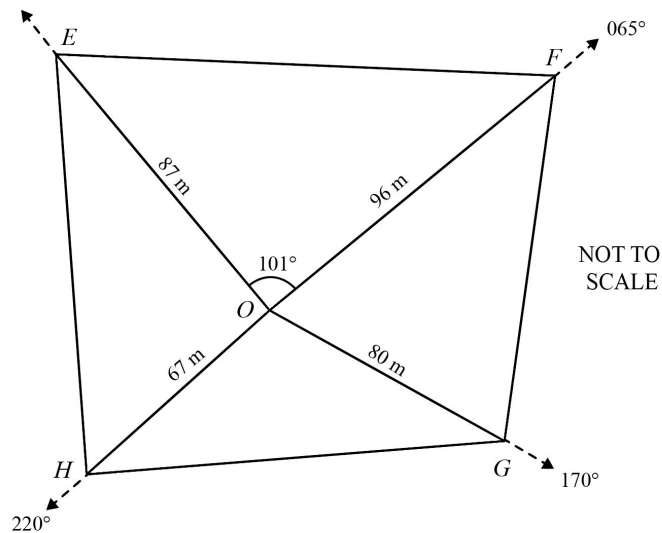This information can be represented by the following equations.

$$A + 12B = 800$$
$$A + 20B = 1200$$

(a)   Solve these two equations simultaneously to find the values of A and B.   **2**

(b)   How many months will it take Georgia to repay the loan in full?   **2**

6   A 4.2 GB file is to be downloaded at a rate of 700 kilobytes per second. How long will it take to download this file? Give your answer in hours and minutes, correct to the nearest minute.   **3**

7   Yumi decided to analyse her results in two assessments.

	Mean	**Standard Deviation**	**Yumi's Mark**
English	68	6	76
Maths	51	16	76

(a)   Using the table above, calculate Yumi's z-scores for English and Maths. Give your answers correct to 3 significant figures   **2**

(b)   In which task did Yumi perform better? Justify your answer.   **1**

8

A radial survey was conducted on a block of land.

(a)   Calculate the area of the triangular section *GHO* correct to the nearest whole number.   **2**

(b)   What is the bearing of *E* from *O*?   **1**

9   Solve $\dfrac{5x + 1}{2} = 4x - 7$.   **2**

10   The population of rabbits on a farm is found to be inversely proportional to the square root   **4**
of the number of sheepdog a farmer owns. Last year a farmer counted 100 rabbits when
she owned 3 sheepdogs. How many fewer rabbits can the farmer expect to have on her farm
if she decides to increase her total number of sheepdogs to 5.