Yr 9 core mod 4 rev sheet 2

1) The scale of a map is $1 : 500\,000$.
    On the map the centres of two cities are $26\,cm$ apart.

    Calculate the actual distance, in kilometres, between the centres of the two cities.

    Answer .... km [2]

2) Aminata buys a business costing $23\,000.

    (a) She pays part of this cost with $12\,000 of her own money.

    Calculate what percentage of the $23\,000 this is.

    Answer(a) .... % [1]

    (b) Aminata's brother gives her 32% of the remaining $11\,000.

    Show that $7\,480 is still needed to buy the business.

    Answer(b)

    [2]

    (c) Aminata borrows the $7\,480 at a rate of $3.5\,\%$ per year **compound** interest.

    Calculate how much money she owes at the end of 3 years.

    Answer(c) $ .... [3]

3)
    (a) Tatiana goes for a walk.

    (i) She walks for 15 minutes at a speed of 80 metres per minute.

    Calculate the distance she walks.

    Answer(a)(i) .... m [1]

4)   A concert hall has 1540 seats.

Calculate the number of people in the hall when 55% of the seats are occupied.

Answer .... [1]

5)   Mark and Naomi share $600 in the ratio   Mark : Naomi = 5 : 1.

Calculate how much money Naomi receives.

Answer $ .... [2]

6)   The scale on a map is 1 : 20 000.

Calculate the actual distance between two points which are 2.7 cm apart on the map.
Give your answer in kilometres.

Answer .... km [2]

7)   Paulo invests $3000 at a rate of 4% per year **compound** interest.

Calculate the **total** amount Paulo has after 2 years.
Give your answer correct to the nearest dollar.

Answer $ .... [3]

8)   A meal on a boat costs 6 euros (€) or 11.5 Brunei dollars ($).

        In which currency does the meal cost less, on a day when the exchange rate is €1 = $1.9037?
        Write down all the steps in your working.

                                                    Answer .... [2]

9)   Eva invests $120 at a rate of 3% per year **compound interest**.

        Calculate the total amount Eva has after 2 years.
        Give your answer correct to 2 decimal places.

                                                    Answer $ .... [3]

10)   Mr and Mrs Clark and their three children live in the USA and take a holiday in Europe.

        (a) Mr Clark changes $500 into euros (€) when the exchange rate is €1 = $1.4593.

        Calculate how much he receives.
        Give your answer correct to 2 decimal places.

                                                    Answer(a) € .... [2]

11)   Falla buys 3000 square metres of land for a house and garden.
       The garden is divided into areas for flowers, vegetables and grass.

       He divides the land in the following ratio.

                   house : flowers : vegetables : grass = 4 : 7 : 8 : 5

       (a) (i) Show that the area of land used for flowers is $875\,\text{m}^2$.

            Answer(a)(i)

                                                                              [2]

12)   Falla sells some of the vegetables he grows.
       These vegetables cost $85 to grow.
       He sells them for $105.

       Calculate his percentage profit.

                                         Answer(d) .... % [3]

13)   To buy the land Falla borrowed $5000 at a rate of 6.4% **compound** interest for 2 years.

       Calculate the **total** amount he pays back at the end of the 2 years.
       Give your answer correct to the nearest dollar.

                                         Answer(e) $ .... [3]

14)   At a theatre, adult tickets cost $5 each and child tickets cost $3 each.

(a) Find the total cost of 110 adult tickets and 85 child tickets.

Answer(a) $ .... [2]

(b) The total cost of some tickets is $750.
There are 120 adult tickets.

Work out the number of child tickets.

Answer(b) .... [2]

(c) The ratio of the **number** of adults to the **number** of children during one performance is

adults : children = 3 : 2.

(i) The total number of adults and children in the theatre is 150.

Find the number of adults in the theatre.

Answer(c)(i) .... [2]

(ii) For this performance, find the ratio   **total cost** of adult tickets : **total cost** of child tickets.
Give your answer in its simplest form.

Answer(c)(ii) .... : .... [3]

(d) The $5 cost of an adult ticket is increased by 30%.

Calculate the new cost of an adult ticket.

Answer(d) $ .... [2]

(e) The cost of a child ticket is reduced from $3 to $2.70.

Calculate the percentage decrease in the cost of a child ticket.

Answer(e) .... % [3]