For Examiner's Use

1 Marcus receives \$800 from his grandmother.

(a) He decides to spend \$150 and to divide the remaining \$650 in the ratio

savings : holiday = 9 : 4.

Calculate the amount of his savings.

$\frac{9}{9+4} \times \$650 = \frac{9}{13} \times \$650$

$= \$450$

Answer(a) \$ 450 [2]

(b) **(i)** He uses 80% of the \$150 to buy some clothes.

Calculate the cost of the clothes.

$\frac{80}{100} \times \$150 = \$120$

Answer(b)(i) \$ 120 [2]

(ii) The money remaining from the \$150 is $37\frac{1}{2}$% of the cost of a day trip to Cairo.

Calculate the cost of the trip.

$\$150 - \$120 = \$30$

$\$30 = 37\frac{1}{2}\%$

$x = 100\%$

$x = \frac{100\%}{37.5\%} \times \$30$

$= \$80$

Answer(b)(ii) \$ 80 [2]

(c) **(i)** Marcus invests \$400 of his savings for 2 years at 5% per year **compound** interest.

Calculate the amount he has at the end of the 2 years.

Total Amount $= \$400\left(1+\frac{5}{100}\right)^2$

$= \$400(1.05)^2$

$= \$441$

Answer(c)(i) \$ 441 [2]

(ii) Marcus's sister also invests \$400, at r% per year **simple** interest.
At the end of 2 years she has exactly the same amount as Marcus.

Calculate the value of r.

Interest $= \$441 - \$400$

$= \$41$

Interest $= \$400 \times \frac{r}{100} \times 2$

$\$41 = \$8 \times r$

$\frac{\$41}{\$8} = r$

$r = 5.125$

Answer(c)(ii) $r =$ 5.125 [3]