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Secondary 1 Math EOY Revision

SEC 2 MATH

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Answer **all** the questions.

1. a) Express 588 as a product of its prime factors.

Answer_____ [1]

b) Given that $504 = 2^3 \times 3^2 \times 7$, find the largest integer which is a factor of both 504 and 588.

Answer_____ [1]

c) Find the smallest positive integer m such that $\sqrt[3]{504m}$ is a positive integer.

Answer_____ [1]

d) Find the smallest positive integer n such that $504n$ is a multiple of 588.

Answer_____ [1]

2. Simplify the following expressions.

a) $\frac{1}{2}a + \frac{1}{2}b - \frac{1}{4}a + \frac{1}{4}b$

Answer_____ [2]

b) $2(3p - 5q) - (2p - 4q)$

Answer_____ [2]

3. The first four terms of a sequence are $1, 4, 9$ and 16.

a) Write down the 6th term of this sequence.

Answer_____ [1]

b) Find an expression, in terms of n, for the n^{th} term, T_n, of the sequence.

Answer $T_n =$_____ [1]

c) Is the number 99 part of the sequence above? Explain your answer.

Answer _____ because _____

_____ [1]

4. Given $a = -2$, $b = 2$ and $c = -3$, evaluate $ab + \frac{2c^3}{a}$.

Answer_____ [2]

5. Sufen paid $\$26.70$ for a pair of shoes after a discount of 25% from a departmental store. What is the original price of the shoes?

Answer $ _____ [2]

6. a) 84 boys and 100 girls signed up for a learning journey. The teacher wanted to divide them into mixed groups with the same number of boys and number of girls in each group.

i) Find the largest possible number of groups in this learning journey.

Answer_____ groups [2]

ii) Hence, find the number of boys in each group.

Answer_____ boys [1]

b) For a television show, $\frac{1}{5}$ of the viewers were under 50 years old, $\frac{1}{4}$ of the viewers were over 75 years old and $\frac{3}{4}$ of those over 75 years old were men. If the total number of viewers was 80, find

i) the number of viewers who were between 50 and 75 years old inclusive,

Answer_____ [2]

ii) the number of women over 75 years old.

Answer_____ [1]

7. a) Mavis travels from Singapore to Thailand. She exchanges 750 Singapore Dollars (S$) to Thai Baht (THB) when the exchange rate is S$1 = 26$ THB. While in Thailand, she spends $14\,200$ THB. On her return, she exchanges the remaining Thai Baht into Singapore Dollars when the exchange rate is S$1 = 26.5$ THB.

   i) How much does she receive in Thai Baht?

Answer_____THB [1]

   ii) Find the amount of Singapore Dollars she receives.

Answer S$_____ [2]

b) Every year, the value of a car depreciates by 15% of its value in the previous year. If the value of the car was $\$93\,925$ in 2022, find its value in 2020.

Answer S$_____ [3]