

Name: _____

Date: _____

Marks: ____/34

Creative Secondary School

F4 MATHEMATICS

Entrance Test 24-25

Question-Answer Book

Time allowed: 40 minutes

INSTRUCTIONS

1. There are 9 questions in this paper. Attempt ALL questions in this paper. Write your answers in the spaces provided in this Question-Answer Book.
2. Unless otherwise specified, all working must be clearly shown.
3. The use of HKEAA approved calculators is permitted.
4. Unless otherwise specified, numerical answers should be either exact or correct to **3 significant figures**.
5. State the unit in your answers.
6. The diagrams in this paper are not necessarily drawn to scale.

1. Consider the data set 15, 18, 18, 20, 21, 22. Find the following of the data set

(a) mean,

(b) median,

(c) mode.

(3 marks)

2. (a) Simplify $\frac{4b^{10}}{2b^6}$.

(b) Simplify $\frac{8a^6}{(2a)^2}$.

(3 marks)

3. Factorize

(a) $2a - 10$.

(b) $y^2 - 25$.

(c) $x^2 - 9x + 18$.

(3 marks)

4. A number is selected from a set of numbers: 3, 6, 9, 12, 15, 18, 21. Write down the probability of getting:

(a) a number divisible by 2,

(b) a number which is less than 15,

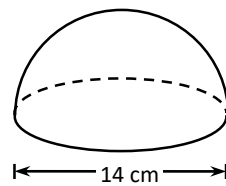
(c) a multiple of 6.

(3 marks)

5. A sum of \$10000 is deposited at an interest rate of 4% p.a. for 2 years, compounded half-yearly. Find the amount and the interest. (Give the answer correct to the nearest \$0.01.) (3 marks)

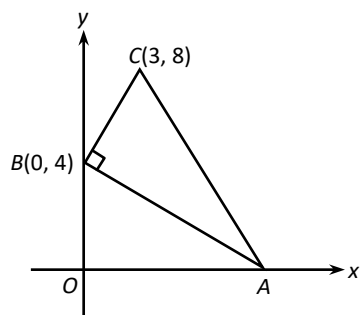
6. The figure shows a hemisphere of diameter 14 cm. Find the total surface area of the hemisphere

(4 marks)

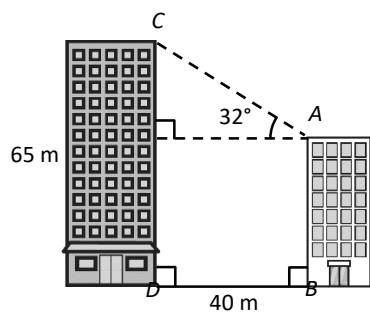


7. In the figure, $\triangle ABC$ is right-angled at B . The coordinates of B and C are $(0, 4)$ and $(3, 8)$ respectively. A is a point lying on the x -axis. Find the coordinates of A .

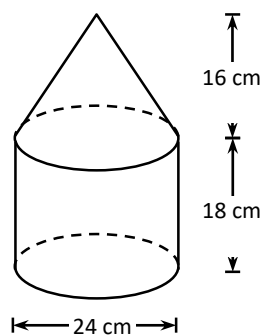
(4 marks)



8. In the figure, AB and CD are two buildings which are 40 m apart. The angle of elevation of the top C of the taller building from the top A of the shorter building is 32° . The height of building CD is 65 m. Find the height of building AB . (3 marks)



9. The figure shows a solid which consists of a right cylinder and a right circular cone with the same base diameter. (5 marks)



- (a) Find the volume of the solid in terms of π .
- (b) Find the total surface area of the solid in terms of π .

10. Consider two similar cylinders. If the ratio of the base area of the smaller cylinder to that of the larger cylinder is $25 : 64$, find the ratio of the base radius of the smaller cylinder to that of the larger cylinder. (3 marks)

END OF PAPER