1 Evaluate

(a) [1]

(b) [1]

2 (a) Express as a decimal.. [1]

(b) In a test, Rose scored 56 marks out of 70.

Express this score

(i) as a fraction [1]

(ii) as a percentage. [1]

3 (a) Express the ratio 40 *g* : 2 *kg* in its simplest form [2]

(b) Matthew invested Rs 500 at 6% simple interest per year. Calculate how

much interest had been earned after 8 months. [2]

4 Solve the inequality 4 - 2*x* < 6. [2]

5 (a) The population of a city is given as 280 000, correct to the nearest ten

thousand. State the greatest possible error in the given value. [1]

(b) The dimensions of a rectangular card are 7 cm by 4 cm, correct to the

nearest centimetre. Calculate the smallest possible perimeter of the card. [1]

6 (a) Express the following numbers in standard form

(i) 6700 [1]

(ii) 0.000578 [1]

(b) 3 103 + 2 101 + 4 10*x* + 5 10*y* = 3024.05, where *x* and *y*

are integers.

Write down the value of *x* and the value of *y*. [2]

7 (a) Express as a decimal, giving your answer correct to 3 decimal places. [1]

(b) Express 31.6824 correct to 3 significant figures. [1]

8 (a) Copy the number 222.222 and circle the digit which represents the value

2 × 100. [1]

(b) Write 5 × 10-2 as a fraction in its simplest form. [1]

(c) Simplify . [1]

(d) Evaluate . [1]

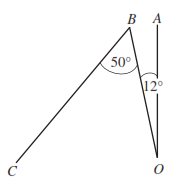
9 (a) The price of a box of soap powder increased from Rs 250 to Rs 265.

Calculate the percentage increase in the price. [2]

(b) The price of a camera was reduced from Rs 4000 to Rs 2800. Calculate

the percentage reduction in the price of the camera. [2]

10 *A* is due North of *O*.



(a) A ship sailed from *O* to *B*, where *AB* = 12°.

Write down the bearing of *B* from *O*. [1]

(b) At *B*, the ship turned and sailed to *C*, where *OC* = 50°.

Calculate the bearing of *C* from *B*. [1]

11 Solve the simultaneous equations

*y* = 2*x* – 3

3*x* – 2*y* = 0 [3]

12 (a) Factorise *3tx – 2sx + 15ty – 10sy*. [2]

(b) Solve the equation . [2]

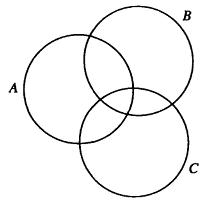
(c) Factorise [2]

13

(a) Find , [1]

(b) Find an expression for . [2]

14 (a) Copy the Venn diagram given below and shade the set *(A*  B) U *C.* [1]



(b) The Universal set is the set of all positive integers and

*P* = { *x : x*< 10}.

Copy and complete the statement given below.

[1]

15 *P* is the point (–2, 1) and *Q* is the point (1, 7).

(a) Find the gradient of the line *PQ*. [1]

(b) Find the equation of the line *PQ.* [1]

(c) The line with equation 2*y* + 3*x* + *k* = 0 passes through the point *P*.

(i) Find *k*. [2]

(ii) Find the gradient of this line. [2]

16 (a) Evaluate . [1]

(b) Using as much of the information below as necessary evaluate . [2]

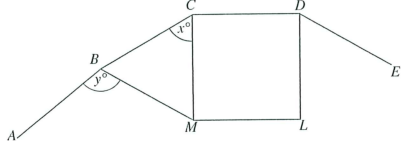


17 (a)Factorise completely [1]

(b) Solve the equation [2]

18 *ABCDE* is part of a regular polygon which has interior angles of 1620.

*CDLM* is a square.



Find (i) the value of *x*, [1]

(ii) the value of *y*. [1]

19 Consider the list of numbers below:

0.8, 1, 0.33333..., , 7, 9,

From the list, state

(a) a prime number, [1]

(b) an irrational number, [1]

(c) a recurring decimal. [1]

20 The matrix

(a) Write down an expression, in terms of *x,* for the determinant of *A*. [1]

(b) Given that the determinant of *A* is 5,

(i) calculate the value of *x*, [1]

(ii) write down A-1. [1]

21. Given that

(a) calculate the value of *c* when . [2]

(b) express *d* in terms of *c*. [3]

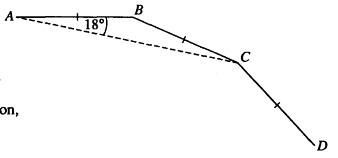
22 The area of a circle centre O and radius *r* cm is 154 cm2. Taking ,

find

(a) the radius of the circle, [2]

(b) the circumference of the circle. [2]

23 *AB,* BC and *CD* are adjacent sides of a regular polygon.



Given that ,calculate

(a)an exterior angle of the polygon, [1]

(b) the number of sides of the polygon, [1]

(c) [1]

24 Consider the sequence .

(a) Write down the 5thterm of the sequence. [1]

(b) Write down, in terms of *n*, an expression for the *n*th term of the sequence.[1]

(c) Evaluate the 10th term of the sequence. [1]

25 (a) When Peter went to Hong Kong, he changed £50 into $616.

Calculate what one British pound (£) was worth in Hong Kong dollars ($). [1]

(b) It takes 8 hours for 5 people to paint a room.

How long would it take 4 people? [1]