SUB: MATHEMATICS
CLASS: VIII

TIME: 3 HRS
MAX MARKS: 100

SET – A

General Instructions:

a) The examination paper consists of 25 questions divided into 3 sections.
b) All questions are compulsory
c) Section A (Q.1 to 10) each carries 3 marks.
d) Section B (Q. 11 to 15) each carries 4 marks.
e) Section C (Q.16 to 18) each carries 6 marks.
f) Wherever internal choice is given, select one question out of two given.

Section - A

1. Find the least number which must be subtracted from 15665 to make it a perfect square.

2. Solve $\frac{x-2}{3} + \frac{x-4}{4} = 10$

   OR

   Solve $\frac{2x}{3} + 1 = \frac{7x}{15} + 3$

3. Simplify (a+b) (2a-3b+c)+(2ac-3bc)

4. Find the cube root of 3375.

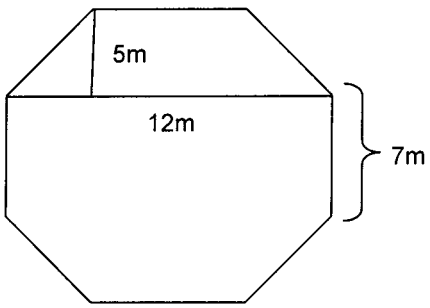
5. Factorise $x^2+12x+27$ using suitable identity.

6. A man takes 20 steps to cover a distance of 18m. How many steps will he needed to cover a distance of 396m?

7. Factorise 5z-7+7xy-5xyz.

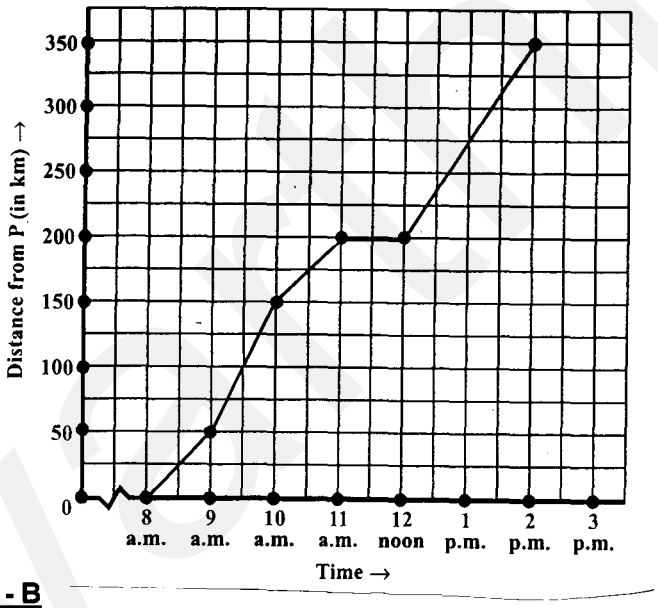
8. The radias of a circular cylinder is 7cm, its height is 10cm. Find the curved surface area, total surface area and volume of the cylinder .

9. Top surface of a raised platform is in the shape of a regular octagon as shown in the figure. Find the area of the octagonal surface.



10. The given graph describes the distances of a car from a city P at different times when it is travelling from city P to city Q, which are 350km apart. Study the graph and answer the following

a) When did the car begin its journey
b) How far did the car go in the first hour?
c) How far did the car go during
   i) The second hour?
   ii) The third hour ?
d) At what time did the car stop for some duration?
e) What was the speed of the car in the first hour?



Section - B

11. a) Find the value of n for which $(5^4)^{2n} \div 5^{-2} = 5^{10}$ (3)
    b) Express 0.000000154 in standard form (1)

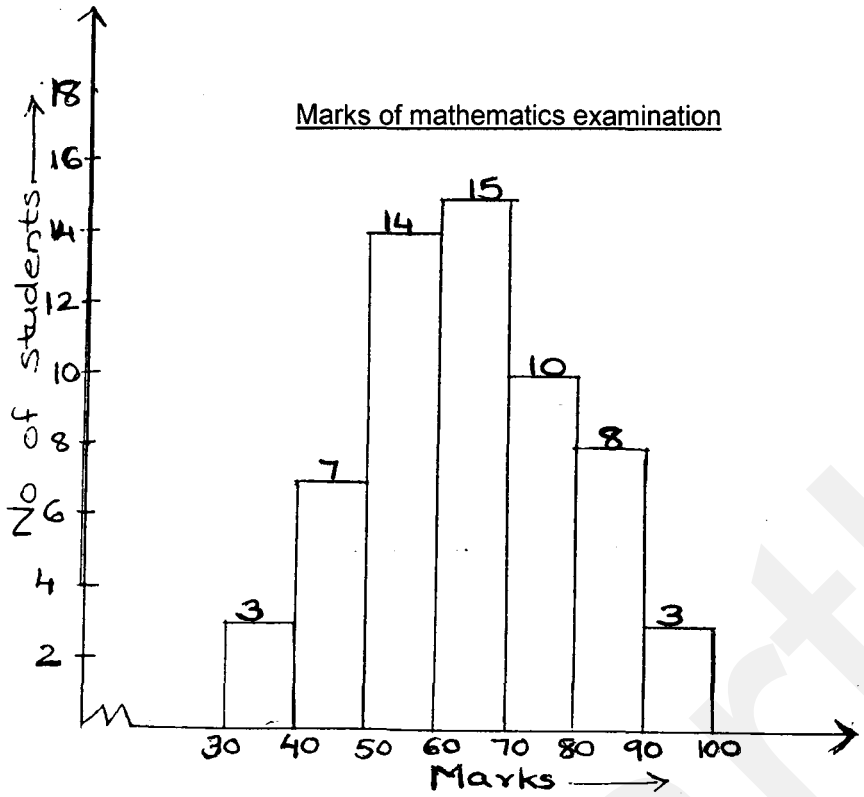
12. The denominator of a rational number is five more than the numerator. If three is added to both numerator and denominator the number becomes ½. Find the rational number

13. a) Two adjacent angles of a parallelogram are in the ratio 7:5. Find the measure of each of the angles (3)
    b) How many sides does a regular polygon have if the measure of an exterior angle is 24^0 (1)

14. Using suitable identities, find the following products
    a) 96x103 b) 102x102

15. The following is a histogram representing the marks obtained by 60 students in a mathematics examination. Answer the following

    a) The score greater than or equal to 80 is considered to be an A+ grade. How many students got A+ grade?
    b) If marks 40 or greater than 40 are considered as passing marks, how many students failed in the examination
    c) what percentage of students have failed to clear the examination.
    d) What percentage of students have passed in the examination.



16. Factorise $4b^2 - 28bc + 49c^2 - 25a^2$ using suitable identities

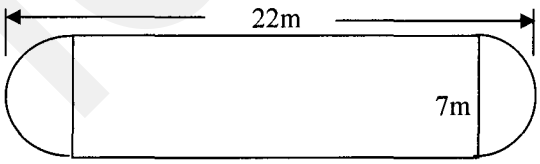
OR

Factorise $a^4 - (a-b)^4$

17. A car is moving at a uniform speed of 54 km /hr

    a) How far will it travel in 20minutes?
    b) Find the time required to cover a distance of 648km?

18. The shape of a garden is rectangular in the middle and semicircular at the ends as shown in the diagram. Find the area of this garden.



19. A bridge can be constructed by 1500 workers in 60 days. How many more such people should be employed to complete the work in 40 days?

20. Draw the graphs for the following tables of values, with suitable scales on the axes.

Time (in hours)	1	2	3	4
Distance covered (in km)	40	80	120	160

Section - C

21. a) The internal measures of a cuboidal room are 13m x 10m x 6m. Find the total cost of white washing all four walls and the ceiling, if the cost of white washing is Rs 7 per m^2 (5)

b) If each edge of a cube is doubled, how many times will its volume increases (1)

22. a) Divide $y(5y^2-125)$ by $5y(y+5)$ (3)

b) Divide $12abc\ (3a-15)(5b+30)$ by $156(a-5)\ (b+6)$ (3)

23. a) On a particular day, the sales (in rupees) of different items of a bakers shop are given below. Draw a pie chart for this data. (5)

Ordinary bread	: 300
Fruit bread	: 80
Cakes and pastries	: 160
Biscuits	: 100
Others	: 80
Total	: 720

b) When a die is thrown, what is the probability of getting an odd number. (1)

24. a) Show that $(4pq+3q)^2-(4pq-3q)^2= 48pq^2$ using suitable identity (4)

b) Use a suitable identity for finding the product of (abc-4) (abc-3) (2)

25. Construct a quadrilateral PQRS where PQ=4cm, QR=6cm, RS=5cm, PS=5.5cm and PR=7cm

OR

Construct a quadrilateral MIST where MI= 3.5cm, IS=6.5cm, $<M=75^0$, $< I=105^0$ & $< S=120^0$

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