Do NOT OPEN

1) $\frac{1}{5}\left(\frac{1}{3x} - 5\right) = \frac{1}{3}\left(8 - \frac{1}{x}\right)$ (2)

2) A local bus is carrying 40 passengers, some with ₹5 tickets and the remaining with ₹7.50 tickets. If the total receipts from these passengers is ₹230, find the number of passengers with ₹5 tickets.   (3)

3) A steamer travels 90 km downwater stream in the same time as it takes to travel 60km upstream. If the speed of the stream is 5km/h, find the speed of the steamer in still water.   (3)

4) Solve the following Inequations and graph their solutions on a number line:
$-4 < \frac{x}{2} \leq 3, \quad x \in I$ (2)

5) Find the sum of money which earn simple interest at $7\frac{1}{4}\%$ P.a. for $2\frac{1}{2}$ years is ₹2356.25   (2)

6) Aryman invested ₹10000 in a company. He would be be paid interest at 7% per annum compounded annually. Find   (3)
(i) the amount received by him at the end of 2 years
(ii) the interest for the 3rd year.

7) If 5 men or 7 women can earn ₹525 per day, how much would be 10 men and 13 women will earn per day?   (3)

8) A, B and C working together can plough a field in $4\frac{4}{5}$ days. A and C together can do it in 8 days. How long would B working alone take to plough the field?   (3)

9) A fort is provided with food for 80 soldiers to last for 60 days. Find how long would the food last if 20 additional soldiers join after 15 days?   (2)

10) Using distributive property find $\left\{\frac{7}{5} \times \left(\frac{-3}{12}\right)\right\} + \left\{\frac{7}{5} + \frac{5}{12}\right\}$ (2)

11) Which is greater $-\frac{9}{13}$ or $-\frac{4}{5}$ (2)

12) A mother and her two sons got a room constructed for ₹60,000. The elder son contributes $\frac{3}{8}$ of his mother's contribution while the younger son contributes $\frac{1}{2}$ of his mother's share. How much do each of them contributed?   (3)

13) Express 16^{-2} as a power with base 2 (2)

14) B. Simplify and write the following in exponential form:

$$3^{-5} \times 3^2 \div 3^{-6} + (2^2 \ast 3)^2 + \left(\frac{2}{3}\right)^{-1} + 2^{-1} + \left(\frac{1}{14}\right)^{-1}$$ (3)

15) Mr. Khurana has two kitchen appliance stores. He compares the sales of two stores during the a month and recovered as given below (4)

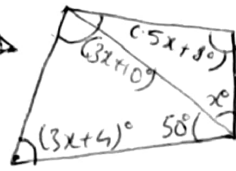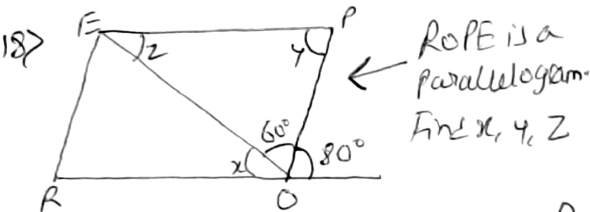| Item	No of items sold	
	Store A	Store B
Grill	40	20
Toaster	35	15
Oven	30	30
Blender	40	30
Coffeemaker	35	40

Draw a double bar graph.

16) The following data represents the number of students got admission in different streams of a college: (4)

Stream	Science	Arts	Commerce	Law	Management
No of students	400	300	500	250	350

Draw a pie chart

17) Find, x, $\angle DAB$, $\angle ADB$ → (3)

$(3x+10)$ $(5x+50)$ x $(3x+4)°$ $50°$

18) ROPE is a parallelogram. Find x, y, z (3)

z, y, $60°$, $80°$, x

19) In the adjoining figure, ABCD is a parallelogram. Perpendiculars DN and BP are drawn on diagonal AC. Prove (i) $\triangle DCN \cong \triangle BAP$, (ii) $AN = CP$ (4)
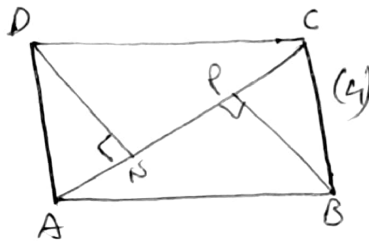
20) In the adjoining figure ABCD is a rhombus, find x, y, z (3)
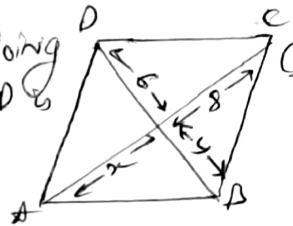
21) Construct a quadrilateral ABCD where AB= 4.5cm, BC=4cm, CD= 3.9cm, AD= 3.2cm and $\angle B = 60°$ (4)

22) Construct a rhombus whose one side is 5cm and one angle is 45° (4)

23) Divide $10xy(14y^2 + 43y - 21)$ by $5x(7y-3)$ (4)

24) A copper wire when bent in the form of a square encloses an area of 121 cm². If the same wire is bent into the form of a circle, find the area of the circle. (3)

25) Using identities find (i) 496 × 504 (4)
(ii) 9.6^2

26) Polygon ABCDE is divided into parts as shown in adjoining figure. Find its area if AD = 8cm, AH = 6cm, AG = 4cm, AF = 3cm and perpendiculars BF = 2cm, CH = 3cm, EG = 2.5cm (4)
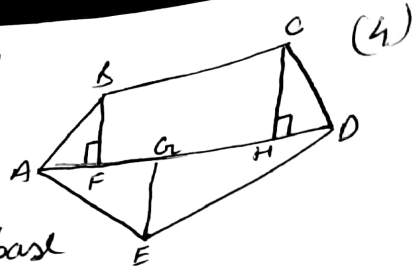
27) Find the height of a cuboid whose volume is 312 cm^2 and base area is 26 cm^2. (3)

28) A rectangular room is 6m long, 5m wide and 3.5m high. It has 2 doors of size 1.1m by 2m and 3 windows of size 1.5m by 1.4m. Find the cost of white washing the walls and the ceiling of the room at the rate of 25.30 per sqm. (4)

29) Using identity $(x+a)(x+b) = x^2 + (a+b)x + ab$ find $(abc+3)(abc-5)$ (3)

30) Simplify $(p^2 - q^2 r)^2 + 2p^2 q^2 r$ (3)

31) Factorise $x^2 - 3xy - 40y^2$ (3)