

YOUNG STAR DEFENCE ACADEMY, AMRITSAR
Contact For Admission: +918101313136 Sainik School,
Military School, RIMC

ALL INDIA SAINIK SCHOOLS ENTRANCE EXAMINATION: 2013

PAPER- MATHEMATICS, GK, LANGUAGE AND INTELLIGENCE
TEST

CLASS- VI

TIME: 2 hrs 30 minutes

Max.Marks: 300

Instructions

1. This question paper contains FOUR sections and you have to answer all questions in the OMR answer sheet section "A" Mathematics contains 50 questions of 3 marks each, Section "B" GK, Section "C" Language and "D" Intelligence contains 25 questions of 2 marks each respectively. Section C is language specific and is to be attempted in the chosen language.
2. There is only one correct answer for each question. Darken only one bubble for each question. If you darken more than one bubble, your answer will be treated as wrong.
3. Evaluation of OMR answer sheet will be done on a computer. Be careful and ensure no unnecessary marks on the OMR answer sheet / fold or attempt to deface the OMR answer sheet, otherwise it will not be evaluated.
4. Rough work must be done on the additional sheet only and NOT on OMR answer sheet.
5. There are total 32 pages in the question paper.

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Sainik School 2013 Paper Class 6
Paper - 1: Mathematics and language
Part - A: Mathematics

Section-1

1. Find the largest and smallest (least) numbers Which can be formed by 5,6,7
Answer=- given number=5,0,7,4
Largest number=7540
Smallest number=4057
2. The number 4318 should be divided by which number so that the quotient is 17?
Answer= required number = $4318 \div 17 = 254$.
3. The side of square room is 12 m. find the cost of carpeting the room at the rate of ₹ 5 per square meter.
Answer= side of square= 12m
Area of square= $12 \times 12 = 144m^2$.
Cost of 1 $m^2 = ₹ 5$
Cost of $144m^2 = ₹ 144 \times 5 = ₹ 720$
4. Find the value of : $1\frac{1}{2} + 2\frac{2}{3} - \frac{1}{6}$.
Answer= $1\frac{1}{2} + 2\frac{2}{3} - \frac{1}{6} = \frac{3}{2} + \frac{8}{3} - \frac{1}{6}$
 $= \frac{9+6-1}{6} = \frac{24}{6} = 4$.
5. The cost of dozen pens is ₹ 90. Find the cost of 20 such pens
Answer= Cost of 12 pens= ₹90
Cost of 20 pens= $₹ \frac{90}{12} \times 20 = ₹ 150$.
6. The marks obtained by a student in five examinations are 90,92,93,95 and 90.
Find his average marks.
Answer= average marks= $\frac{90+92+93+95+90}{5}$
 $= \frac{460}{5} = 92$.
7. What is 15% Of Rs 500?
Answer=15% of ₹ 500
 $= \frac{15}{100} \times ₹ 500 = ₹ 75$.
8. Change 40 m/sec into km/hr.

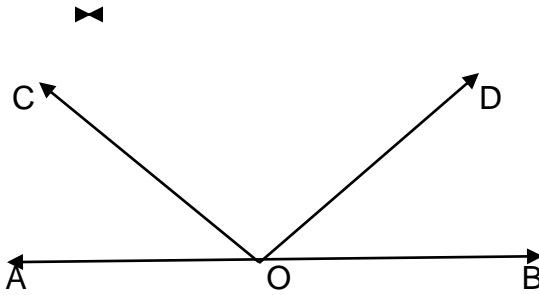
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$$\text{Answer} = 40 \text{m/s} = 40 \times \frac{18}{5} \text{ km/hr}$$

$$= 8 \times 18 = 144 \text{ km/hr}$$

9. In the given figure, AOB is a straight line

if $\angle AOC + \angle BOD = 85^\circ$, then find the measure of $\angle COD$.



$$\text{Answer} = \angle AOC + \angle COD + \angle BOD = 180^\circ$$

$$\angle COD = 180 - 85 = 95^\circ$$

$$[\because \angle AOC + \angle BOD = 85^\circ].$$

10. The side of square is 25 m. what is the perimeter of the square

$$\text{Answer} = \text{side of a square} = 25 \text{m}$$

$$\text{Perimeter of a square} = 4 \times 25 = 100 \text{m}.$$

Section - 2

11. Simplify:

$$1 + \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{6} + \left(\frac{3}{4} - \frac{1}{3} \right) \right\}$$

$$\text{Answer} = 1 + \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{6} + \left(\frac{3}{4} - \frac{1}{3} \right) \right\}$$

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$$\begin{aligned} &= 1 + \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{6} + \left(\frac{9-4}{12} \right) \right\} \\ &= 1 + \left\{ \frac{1}{2} + \frac{1}{3} + \frac{1}{6} \times \frac{12}{5} \right\} \\ &= 1 + \left\{ \frac{1}{2} + \frac{1}{3} + \frac{2}{5} \right\} \\ &= 1 + \left\{ \frac{5+10+12}{30} \right\} \\ &= 1 + \frac{37}{30} = 1 \times \frac{30}{37} = \frac{30}{37} \end{aligned}$$

12. If 15 men can do a piece of work in 20 days, in how many days can 25 men finish the same work?

answer = 15 men can do a work in 20 days

25 men can do the same work in $\frac{20 \times 15}{25} = 12$ days.

13. The radius of circle is 7 cm. find the diameter, area and circumference

Answer = the radius of circle = 7 cm

Diameter of a circle = $2 \times 7 = 14$ cm

Area of circle = $\pi r^2 = \frac{22}{7} \times 7 \times 7 = 154$ cm²

Circumference of circle = $2 \pi r$

$$\begin{aligned} &= 2 \times \frac{22}{7} \times 7 \\ &= 44 \text{ cm.} \end{aligned}$$

14. Find the simple interest on ₹5,600/- at the rate of 5% per annum for a period of three year .

$$\begin{aligned} \text{Answer} = \text{simple interest} &= \frac{p \times r \times t}{100} \\ &= 5600 \times 5 \times 3 = ₹ 840 \end{aligned}$$

15. The LCM of two numbers is 630 and their HCF is 9. if one number is 90, then find out the other number?

$$\begin{aligned} \text{Answer} = \text{Other number} &= \frac{LCM \times HCF}{\text{one number}} \\ &= \frac{630 \times 9}{90} = 63 \end{aligned}$$

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16. In a school, 75% of the student are boys. If the numbers of the girls in 420, find the numbers of boys in that school.

Answer = let the total number of students = x

According to question,

25% of x = 420

$$\Rightarrow \frac{25}{100} \times x = 420, x \Rightarrow 1680$$

No. of boys = 1680 - 420 = 1260.

17. The angles of a triangle are in the ratio 1:2:3. find the angles. Also write the type of the triangle.

Answer = $x + 2x + 3x = 180^\circ$

$$6x = 180^\circ \Rightarrow x = 30^\circ$$

\therefore angles of triangles are $30^\circ, 60^\circ, 90^\circ$.

One angle is 90° . Therefore it is right triangle.

18. Find the average, of first ten counting numbers.

$$\text{Answer} = \text{average} = \frac{1+2+3+4+\dots+10}{10} = \frac{55}{10} = 5.5$$

Second method,

$$\text{Average} = \frac{10 \times 11}{2 \times 10} = \frac{11}{2} = 5.5.$$

19. Find the square root of $5\frac{19}{25}$

$$\text{Answer} = \text{square root of } 5\frac{19}{25} = \pm \frac{144}{25} = \frac{12}{5} = 2.4.$$

20. The radius of a wheel is 35 cm. how much distance will it travel in 100 revolutions?

$$\text{Answer} = c = 2\pi r = 2 \times \frac{22}{7} \times 35 = 220\text{cm}$$

1 revolution = 220cm

100 revolution = 22000cm = 220m.

Section-3

21. A town's population is 2,65,000. in which 40% are males, 30% females and rest are children. Find out the numbers of males, females and children in the town.

$$\begin{aligned} \text{Answer} = \text{number of males} &= \frac{40}{100} \times 265000 \\ &= 106000 \end{aligned}$$

$$\begin{aligned} \text{Numbers of females} &= \frac{30}{100} \times 265000 \\ &= 79500 \end{aligned}$$

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$$\text{Number of children} = \frac{30}{100} \times 265000 \\ = 79500.$$

- 22.** the average age of a class of 40 students is 18 years. When a teacher joins them. Their average age become 19 years. Find the teacher's age.

$$\begin{aligned} \text{Answer} &= \text{total age of 40 students} = 40 \times 18 \\ &= 720 \text{ years} \\ &= \text{Total age with teacher} = 41 \times 19 \\ &= 779 \text{ years} \end{aligned}$$

$$\begin{aligned} \therefore \text{age of teachers} &= 779 - 720 \\ &= 59 \text{ years.} \end{aligned}$$

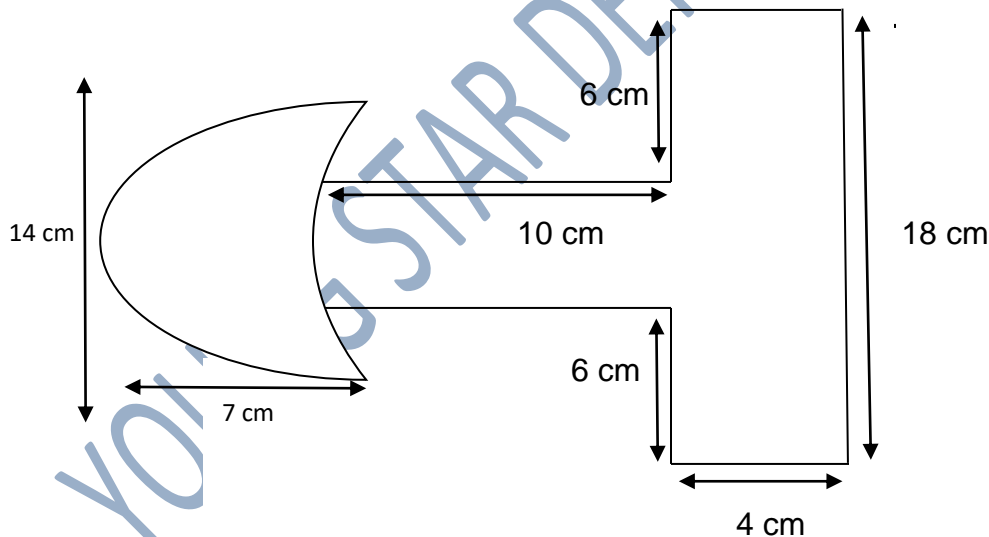
- 23.** The angles of a triangle are in the ratio of 2:3:5. Find the angles of the triangles.

$$\begin{aligned} \text{Answer} &= 2x + 3x + 5x = 180^\circ \\ 10x &= 180^\circ \\ \Rightarrow X &= 18^\circ \end{aligned}$$

Angles of triangles are $36^\circ, 54^\circ, 90^\circ$.

- 24.** A man sold two radios at ₹ 924/- each on one he gains 20% on another he loses 20%.how much does he gains or lose in the whole transactions

- 25.** Find the area of the figure given below:



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25- answer = area of figure = $18 \times 4 = 72 \text{ cm}^2$

$$= 10 \times 6 = 60 \text{ cm}^2$$

$$= \frac{1}{2} \times \frac{22}{7} \times 7 \times 7 = 77 \text{ cm}^2$$

Total area = $72 + 60 + 77$

$$= 209 \text{ cm}^2$$

- 26.** How many bricks, each measuring $25 \text{ cm} \times 12.5 \text{ cm} \times 7.5 \text{ cm}$ will be needed to construct a wall 15 m long, 1.8 m high and 37.5 cm thick ?

$$\text{Answer} = \text{volume of wall} = \frac{1500 + 180 + 375}{10} \text{ cm}^3$$

$$\text{Volume of each bricks} = \frac{25 \times 125 \times 75}{10 \times 10} \text{ cm}^3$$

$$\begin{aligned} \text{Number of bricks} &= \frac{1500 \times 180 \times 375 \times 10 \times 10}{25 \times 125 \times 75} \\ &= 2 \times 180 \times 12 = 4320. \end{aligned}$$

- 27.** Calculate the time in which ₹1,250/- would become ₹1,375/- at 4% rate of interest per annum?

$$\text{Answer} = P = ₹1250$$

$$A = ₹1375$$

$$\text{S.I.} = A - P = 1375 - 1250 = ₹125$$

$$\text{Time} = \frac{\text{S.I.} \times 100}{P \times R}$$

$$= \frac{125 \times 100}{1250 \times 4} = \frac{5}{2} = 2\frac{1}{2} \text{ years}$$

- 28.** A number is divided into two parts such that their sum is 246. One part is twice the others. Find the two parts .

Answer = according to question,

$$X + 2x = 246$$

$$3x = 246$$

$$X = \frac{246}{3} = 82$$

So, the first part = $x = 82$

And, second part = $2x = 2 \times 82 = 164$.

- 29.** How many wooden cubical blocks of edge 20 cm can be cut from a log of wood of size $8 \text{ m} \times 5 \text{ m} \times 80 \text{ cm}$, assuming there is no wastage .

$$\text{Answer} = \text{volume of cuboid} = 80 \times 500 \times 80 \text{ cm}^3$$

$$\text{Volume of cube} = 20 \times 20 \times 20 \text{ cm}^3$$

$$\text{Number of cubical wooden blocks} = \frac{800 \times 500 \times 80}{20 \times 20 \times 20}$$

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$$=800 \times 5 = 4000.$$

- 30.** The perimeter of square and circumference of a circle is each equal to 44cm. find their areas. Which area is greater and by how much

Answer=perimeter of square=44cm

$$\text{Side of square} = \frac{44}{4} = 11\text{cm}$$

$$\text{Area of square} = 11 \times 11 = 121 \text{ cm}^2$$

$$\text{Circumference of circle} = 44\text{cm}$$

$$2 \times \frac{22}{7} \times r = 44$$

$$R = \frac{7 \times 44}{44} = 7\text{cm}$$

$$\begin{aligned} \text{Area of circle} &= \pi r^2 = \frac{22}{7} \times 7 \times 7 \\ &= 154\text{cm}^2 \end{aligned}$$

Clearly area of circle is greater than area of square

$$\text{Difference} = 154 - 121 = 33\text{cm}^2$$

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