

# HIBA Math Olympiad (HMO)

## Sample Paper Grade 5

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Pattern and Marking Scheme				
Grade	Topic / Section	NO. of Questions	Marks Per Questions	Total Marks
Grade 1	Practical Mathematics	40	1	40
	Achiever's Section	10	2	20
<b>Grade Total</b>		<b>50</b>		<b>60</b>

The total duration of the exam is 60 minutes. Grade5 (Age 10–11)

### Syllabus

**Section 1:** Numerals, Number Names and Number Sense (7 and 8 digit numbers), Computation Operations, Fractions and Decimals, Measurement of Length, Weight, Capacity, Volume, Time, Temperature and Money, Conversions, Geometrical Shapes and Solids, Angles, Perimeter of Various Shapes & Area of Rectangle and Square, Symmetry, Data Handling.

**Achievers Section:** Higher Order Thinking Questions - Syllabus as per Section

## Each Question is 1 Mark

1. How many triangles are there in the given figure?



- a. 15                      b. 14                      c. 12                      d. 16

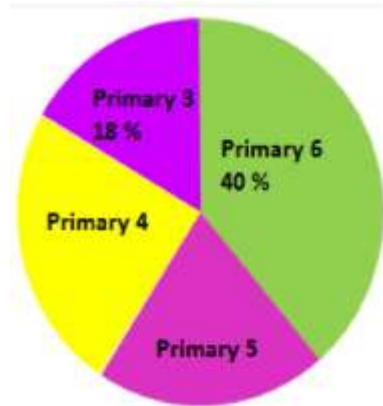
2. What is the mirror image of the given figure?



- a.                       b.                       c.                       d. 

3. In the number line below, what is the value of P?



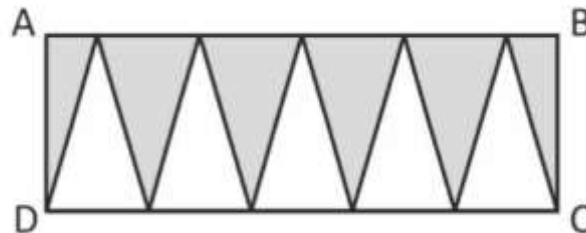


- a. 12%                      b. 14%                      c. 19%                      d. 21%

**9.** Find the distance covered by a train in the month of October, if it is travelling without stopping for a single minute continuously at the speed of 68 km/hour

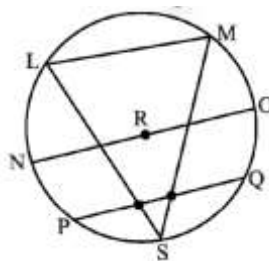
- a. 37,290 km                      b. 50,592 km  
 c. 12,740 km                      d. 64,280 km

**10.** The perimeter of a rectangle ABCD is 280 cm. The base of two triangles equals the length of AD. What is the area of the shaded parts of rectangle ABCD?



- a.  $200 \text{ cm}^2$                       b.  $2200 \text{ cm}^2$                       c.  $2002 \text{ cm}^2$                       d.  $2000 \text{ cm}^2$

**11.** How many chords and radii have been shown in the given circle?



a. 6, 5

b. 5, 7

c. 5, 2

d. 2, 5

**12.** Find the value of the following

$$- 53 \times 27 - (- 462) + 294.50 - (- 2135.80)$$

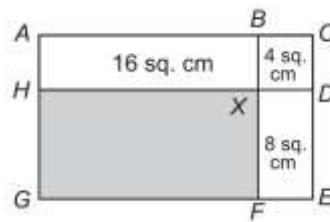
a. 1532.8

b. 1461.3

c. 1789.33

d. 1964.9

**13.** Rectangle ACEG below is divided into 4 parts. BCDX is square. What is the area of the shaded part?



a. 28 sq. cm

b. 32 sq. cm

c. 48 sq. cm

d. 64 sq. cm

**14.** A wire is 67 cm longer than a rope and 1m 9cm shorter than a string. The string is ----- longer than the rope.

a. 1m

b. 1m 67 cm

c. 1m 76cm

d. 76cm

**15.** Olivia was given a test of 3 hours. Due to an emergency, he left after just 20 minutes. What fraction of time did he sit for the exam?

 a.  $\frac{1}{9}$ 

 b.  $\frac{1}{2}$ 

 c.  $\frac{8}{9}$ 

 d.  $\frac{1}{4}$ 

**16.** What is  $72,190,842 + 4,372,074 - 28,108,356$  rounded off to nearest thousands?





b.  $\frac{(7x+3)}{4}$

c.  $\frac{(7x+17)}{4}$

d.  $\frac{(7x+13)}{4}$

**26.** For a project, Reh has to go and live in a different city. He left on 14th March and stayed there for 59 days (including the day he left). When did he come back?

a. 18th May

b. 11th May

c. 30th April

d. None of the above

**27.** 240 girls and 560 boys took part in a national art competition. What percentage of the participants were girls?

a. 35%

b. 30%

c. 32%

d. 28%

**28.** In a Mathematics test, Sunil scored 0.6 of what Manish scored and Manish max scored 0.7 of what Dinesh scored. If Manish scored 70 marks, how many more marks did Dinesh score than Sunil

a. 58

b. 48

c. 68

d. 78

**29.** What do we get when we divide the sum of  $\frac{45}{9}$  and  $\frac{36}{11}$  by their difference?

a. 9.99

b. 10.01

c. 8.02

d. None of the above

**30.** Which expression has a value greater than -3?

a.  $4 + (-9)$ b.  $3 + (-8) + 1$ c.  $-10 + 8$ d.  $-1 + (-5) + 2$ 

**31.** A water tank has a capacity of 420 litres. Tap A pumps water into the tank at the rate of 6 litres per minute while Tap B pumps water out of the tank at the

rate of 2 litres per minute. Both taps are turned on when the tank is empty.

How long will it take the tank to be  $\frac{2}{5}$  full of water?

- a. 38 minutes
- b. 42 minutes
- c. 44 minutes
- d. 52 minutes

**32.** The mixed fraction  $5\frac{4}{7}$  can be expressed as:

- a.  $\frac{33}{7}$
- b.  $\frac{39}{7}$
- c.  $\frac{33}{4}$
- d.  $\frac{39}{4}$

**33.** The decimal form of  $\frac{87566}{1000}$  is .

- a. 8.7566
- b. 875.660
- c. 8756.66
- d. 87.566

**34.** The LCM of a and b is 220. Which of the following can be the HCF of a and b?

- a. 33
- b. 15
- c. 20
- d. 12

**35.** Find the number of small cubes formed if a big cube of side 32 m is cut into small cubes of side 6 m.

- a. 112
- b. 115.
- c. 120
- d. 125

**36.** A box weighs 0.55 kg. When 7 packets of orange juice were placed into it, the total mass became 3.35 kg. When 3 packets of orange juice were taken out and a bottle of orange juice was placed into the box, the mass of the box became 3.65 kg. Find the mass of the bottle of orange juice.

- a. 0.25 kg
- b. 1.05 kg
- c. 1.5 kg
- d. 1.55 kg

**37.** 3 cups of milk filled to the brim are poured into a jug. If the volume of the milk poured in the jug is 1 L 800 ml, what is the volume of 2 cups of milk?

Give your answer in L and ml ?

- a. 1 L 200 ml

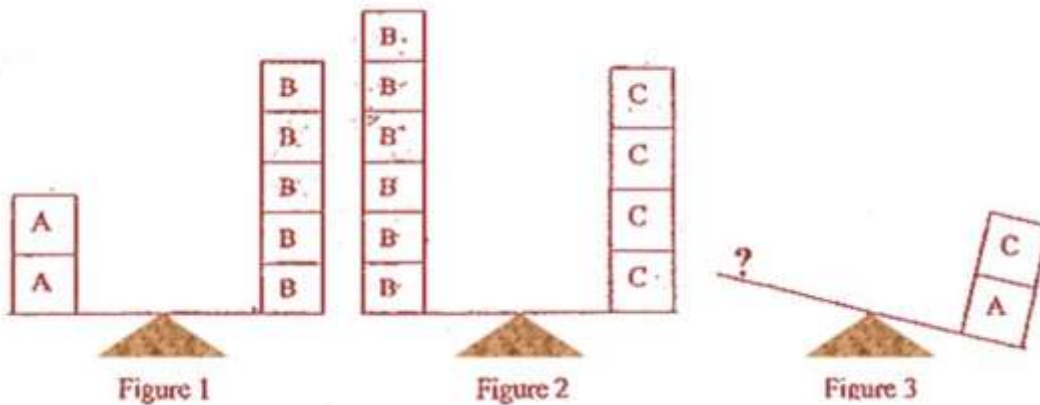
- b. 1 L 600 ml
- c. 1 L 100 ml
- d. 1 L 500 ml

**38.** Which number will complete the pattern of the equivalent fractions?

$$\frac{4}{3} = \frac{9}{12} = \frac{\quad}{36} = \frac{81}{108}$$

- a. 27
- b. 36
- c. 18
- . none of these

**39.** There are 3 types of bricks A, B and C. How many bricks of B must be placed to balance the scale in Figure 3?



- a. 2
- b. 3
- c. 4
- d. 5

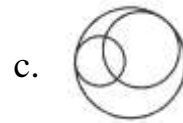
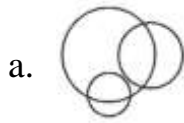
**40.** Find the value of x:

$$301.01 - 0.101 = x + 198.01$$

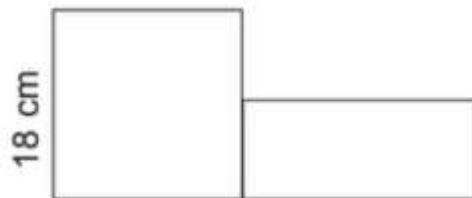
- a. 103.119
- b. 103.101
- c. 102.901
- d. 102.899

## Each Question is 2 Mark

**41.** Which picture has symmetry?



**42.** The given figure is made up of a square and a rectangle. The breadth of the rectangle is  $\left(\frac{1}{3}\right)^{rd}$  the length of the edge of the square. If the area of the whole figure is 384 sq. cm, then find the length of the rectangle.



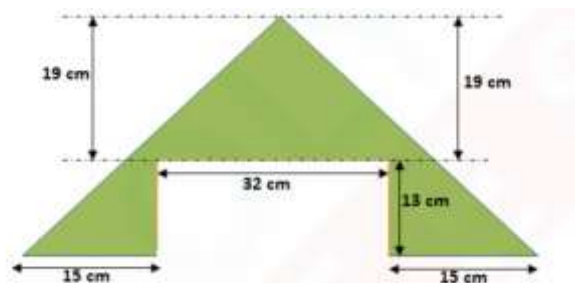
a. 12 cm

b. 8 cm

c. 10 cm

d. 9 cm

**43.** A rectangle of length 32 cm and breadth 13 cm was cut out from a triangular piece of paper as shown in the figure below. Find the area of the remaining piece of paper that is shown below.



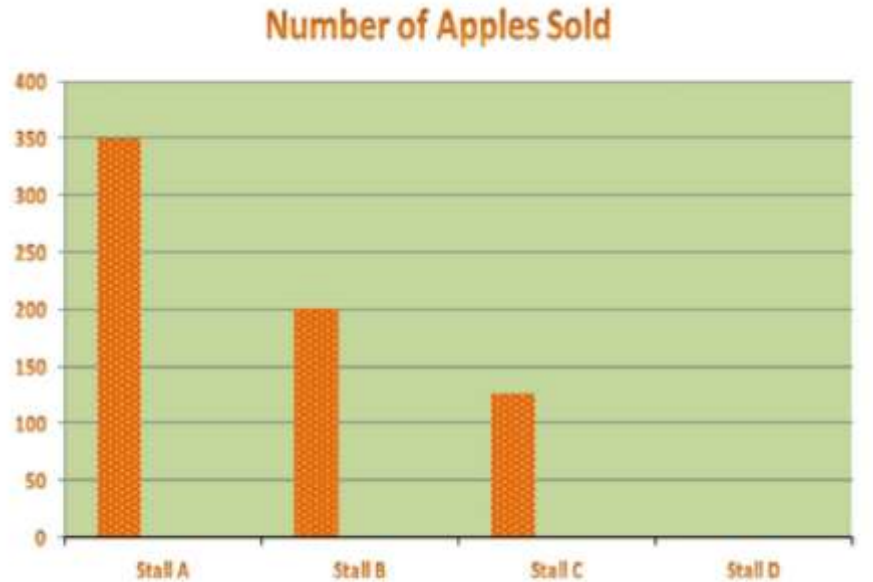
a. 276 sq. cm

b. 576 sq. cm

c. 626 sq. cm

d. 476 sq. cm





- a.  $a \rightarrow 225, b \rightarrow 75\%$
- b.  $a \rightarrow 325, b \rightarrow 65\%$
- c.  $a \rightarrow 220, b \rightarrow 70\%$
- d.  $a \rightarrow 275, b \rightarrow 25\%$

**48.** If  $A * B = AB(A - B)$ , then find the value of  $509 * 218$ :

- |                |                |
|----------------|----------------|
| a. 3,75,29,355 | b. 8,64,29,574 |
| c. 2,34,65,482 | d. 3,22,89,942 |

**49.** While cooking a curry, the mass of it reduced from 1 kg to 850 g. Find the % reduction in the weight of the curry.

- |        |        |
|--------|--------|
| a. 30% | b. 20% |
| c. 15% | d. 50% |

**50.** Which of the following statements is not true?

- |                                       |                                   |
|---------------------------------------|-----------------------------------|
| a. $518 - (-2459) > (-687) - (-1040)$ | b. $-584 - (347) < 960 - (-728)$  |
| c. $6250 + (-3012) > 6240 - (-271)$   | d. $-888 + (3002) > 1001 - (-13)$ |

## Answer Key

1.	d	2.	a	3.	c	4.	b	5.	b	6.	a	7.	a
8.	c	9.	b	10.	d	11.	c	12.	b	13.	b	14.	c
15.	a	16.	a	17.	b	18.	c	19.	b	20.	d	21.	b
22.	b	23.	a	24.	c	25.	d	26.	b	27.	b	28.	a
29.	c	30.	c	31.	b	32.	b	33.	d	34.	c	35.	d
36.	c	37.	a	38.	a	39.	c	40.	d	41.	d	42.	c
43.	b	44.	b	45.	c	46.	a	47.	a	48.	d	49.	c
50.	c												