EHF

LEARNING FOR LIFE

EDUHEAL FOUNDATION

CLASS 8

LEVEL – 1

Set A1

EHF OLYMPIADS

• 4000 schools • 6 lakh students

• 10 olympiads • Global outreach

EHF NATIONAL INTERACTIVE MATHS OLYMPIAD

Name : .....

Roll No : .....

Class : .....

School : .....

BSE international finance olympiad (BIFO)

NATIONAL IIT-PMT OLYMPIAD (NIPO)

Level - 1 : All Level-1 successful* participants will get certificate, apititude report and online subscription, and school toppers will be eligible for school hero medals.

Level - 2 : School toppers* will be selected for level-2-National level - online computer based interactive test held at exam centres all over India. Besides selection for level-3, winner will get merit certificate, medals, educational CDs, laptop, scholarship and other prizes. There is no level-2 in Art and Cricket.

Level - 3 : Toppers will qualify# for level-3-International level-where you will compete with students globally. Get selected for EHFs International Olympiad training camp. Only Indian organization giving students exposure to global competitions. Represent India & win laurels. Guidance by top scientists. Prizes ranges from cash (millions of $), gadgets, foreign trips, publicity, fame, scholarships, Internships, conference participation and more.

* # See prospectus/website for details

Instructions for the Candidate

1. You are allowed additional 10 minutes to fill the required details in the RESPONSE SHEET (OMR).
2. The question paper is made as per syllabus guidelines & pattern given in the information Booklet. The Question Paper for Classes 1 to 6 contains 25 Questions each to be answered in 40 minutes. The Question paper for classes 7 to 12 contains 50 Questions each to be answered in 60 minutes. All questions are compulsory. Further instructions are given in the instruction letter to the teacher.
3. Use the response sheet to mark your responses by darkening the required circle. The response sheet has to be returned to the foundation, duly filled in. THE STUDENT CAN RETAIN THE QUESTION PAPER.

WEBSITE : WWW.EDUHEALFOUNDATION.ORG
E-MAIL : INFO@EDUHEALFOUNDATION.ORG

ROUGH WORK

MENTAL ABILITY

1. Running at a speed of 60 km/hr, a train passed through a 1.5 km long tunnel in two minutes. What is the length of the train?

(1) 250 m (2) 500 m

(3) 1000 m (4) None of these

2. How many numbers lie between 300 and 500 in which 4 comes only one time?

(1) 99 (2) 100

(3) 110 (4) None of these

3. A gardener increased the area of his rectangular garden by increasing its length by 40% and decreasing its width by 20%. The area of the new garden

(1) Has increased by 20%

(2) Has increased by 12%

(3) Has increased by 8%

(4) None of these

4. Two vans start towards each other, from two places P and Q which are at a distance of 160 km. They start at the same time 8:10 am. If the speeds of the vans are 50 km and 30 km per hour respectively, they will meet each other at

(1) 10 : 10 am

(2) 10 : 30 am

(3) 11 : 10 am

(4) None of these

5. Consider the following situation:

(i) Avantika scored more than Ritu.

(ii) Ritu scored less than Meetu.

(iii) Meetu scored more than Avantika.

(iv) Sonal scored more than Avantika but less than Meetu.

Who scored the highest?

(1) Sonal (2) Ritu

(3) Meetu (4) None of these

6. Five children were administered psychological tests to know their intellectual levels. In the report, psychologists pointed out that the child A is less intelligent than the child B. The child C is less intelligent than the child D. The child B is less intelligent than the child C and child A is more intelligent than the child E. Which child is the most intelligent?

(1) A (2) B

(3) D (4) None of these

7. In a cricket series, India decided Australia twice; West Indies defeated Indian twice; Australia defeated West Indies twice; India defeated New Zealand twice. Which country has won most number of times?

(1) West Indies

(2) New Zealand

(3) India

(4) None of these

8. If 'P + Q' means 'P is the brother of Q'; 'P × Q' means 'P is the father of Q', 'P + Q' means 'P is the mother of Q'; which of the following would mean 'R is the son of M'?

(1) M × S × R

(2) M ÷ R × S

(3) M + R × S

(4) None of these

9. Two different schools A and B have the same number of pupils. The ratio of the boys in school A and the boys in school B is 2 : 1 and the ratio of the girls in school A and the girls in school B is 4 : 5. Find the ratio of the boys in school A to the girls in school A.

(1) 1 : 2

(2) 3 : 4

(3) 2 : 5

(4) None of these

10. Deepak is taller than Sumit but shorter than both Alka and Anu. Alka is shorter than Anu. Nitika is shorter than Sumit. Who is the shortest?

(1) Deepak

(2) Nitika

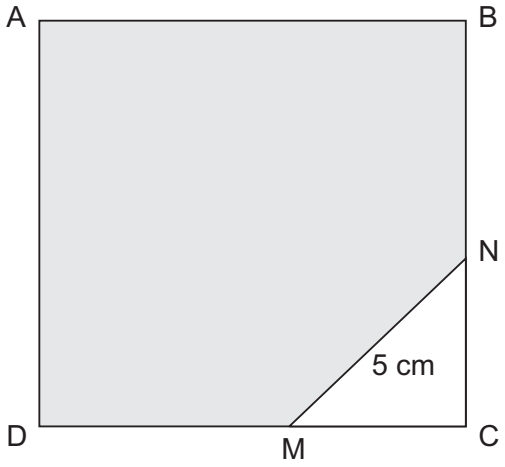
(3) Alka

(4) None of these

11. The length of the rectangle is four times its width. If the area is 100 m^2. What is length of the rectangle?

(1) 20 m
(2) 5 m
(3) 25 m
(4) None of these

12. The perimeter of the square ABCD is equal to 100 cm. The length of the segment MN is equal to 5 cm and the triangle MNC is isosceles. Find the area of the pentagon ABNMD.



(1) 700 m^2
(2) 700 cm^2
(3) 618.75 cm^2
(4) None of these

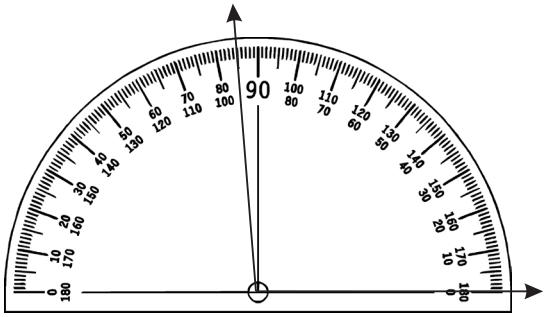
13. The quotient of y and –25 is –100. Find the value of y.

(1) 4
(2) 2500
(3) –4
(4) None of these

14. Seven more than twice Sudhir's age is 55. How old is Sudhir?

(1) 62 years old
(2) 24 years old
(3) 48 years old
(4) None of these

15. What is the measure of the angle below?

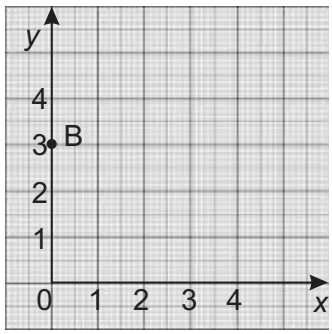


(1) 95°
(2) 85°
(3) 0°
(4) None of these

16. Change 3.56×10^{-2} to standard form.

(1) 356
(2) –712
(3) .0356
(4) None of these

17. What is the x-coordinate of point B?



(1) 3
(2) 0
(3) – 3
(4) None of these

18. If the sum of five consecutive numbers is 70, then find the numbers.

(1) 11, 12, 13, 14 and 15
(2) 12, 13, 14, 15 and 16
(3) 10, 11, 12, 13 and 14
(4) None of these

19. Simplify: $\sqrt{2} + 1/\sqrt{2} - 1$

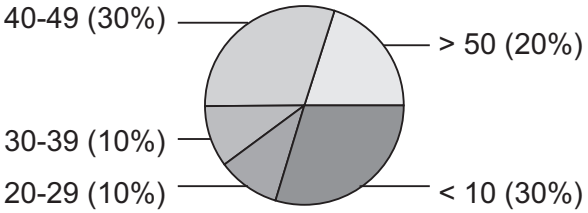
(1) $\frac{\sqrt{2}}{3}$

(2) $\frac{3}{\sqrt{2}}$

(3) $3 + 2\sqrt{2}$

(4) None of these

20. Chart shows average score of players in a cricket tournament. Players who scored with an average of 40 or more, would be selected for next tournament. If 110 players participated in the tournament, find the number of players who did not qualify for next tournament.



(1) 55

(2) 45

(3) 75

(4) None of these

21. A shopkeeper sells a bat for ₹ 45 and losses $\frac{1}{10}$ of what it costs him. Find the cost price of bat.

(1) ₹ 51

(2) ₹ 48

(3) ₹ 50

(4) None of these

22. Factorize: $(81x^4 - 288x^2 + 256)$

(1) $(3x - 4)(3x - 4)(3x - 4)(3x - 4)$

(2) $(x - 1)(9x + 16)(x - 1)(9x + 16)$

(3) $(3x + 4)(3x + 4)(3x - 4)(3x - 4)$

(4) None of these

23. Kiran can finish a work in 32 minutes. Priyanka works thrice as fast as Kiran. How long will it take to finish the work, if Kiran and Priyanka work together?

(1) 6 mins

(2) 7 mins

(3) 8 mins

(4) None of these

24. If y be the reciprocal of rational number x, then the reciprocal of y will be

(1) x

(2) y

(3) $\frac{x}{y}$

(4) None of these

25. Adjacent sides of a rectangle are in the ratio 5:12, if the perimeter of the rectangle is 34 cm, find the length of the diagonal.

(1) 13 cm

(2) 14 cm

(3) 15 cm

(4) None of these

26. When Tara looked at her mobile phone bill for the month, she saw that she had spent $\frac{1}{6}$ of her minutes talking to her mother $\frac{1}{6}$ of talking to her best friend. What fraction of the minutes did Tara spend talking to either her mom or her best friend?

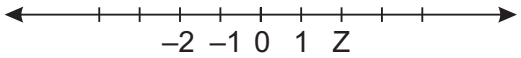
(1) $\frac{5}{6}$

(2) $\frac{1}{3}$

(3) $\frac{3}{4}$

(4) None of these

27. The number line shows an unknown number Z.



(1) Positive

(2) Negative

(3) Can't say

(4) None of these

28. Select the expression/s that are equivalent to $\frac{9^{-2}}{3^{-2}}$.

(1) $\frac{1}{3^2}$

(2) 3^{-2}

(3) Both 1 and 2

(4) None of these

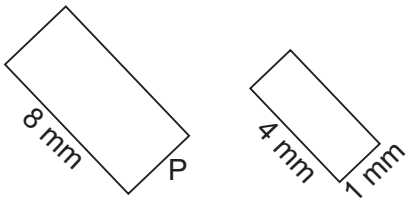
29. As a part of stuffed animal drive for the local children's hospital, the students at Primary School record how many stuffed animals they have collected.

Stuffed Animals	
Number of stuffed animals	**Frequency**
0	8
1	14
2	20
3	6
4	16
5	9

How many students have more than 2 stuffed animals?

(1) 20
(2) 22
(3) 31
(4) None of these

30. If these two shapes are similar, what is the measure of the missing length P?



(1) 1 mm
(2) 2 mm
(3) 3 mm
(4) None of these

31. Reena has 41 more bouncy balls than Neena. Neena has b bouncy balls. Choose the expression that shows how many bouncy balls Reena has.

(1) $41 - b$
(2) b
(3) $b + 41$
(4) None of these

32. For 5 nights, Tejas tracked the number of pages he read in his book before going to bed:

9 pages, 7 pages, 9 pages, 8 pages, 6 pages

What was the mode of the numbers of pages that Tejas read?

(1) 6
(2) 8
(3) 9
(4) None of these

33. What is the mean?

–3, –4, –3, –4, –2, –3, –2

(1) –3
(2) –4
(3) –2
(4) None of these

34. If a ray stands on a line, then the sum of two adjacent angles so formed is

(1) 0°
(2) 90°
(3) 180°
(4) None of these

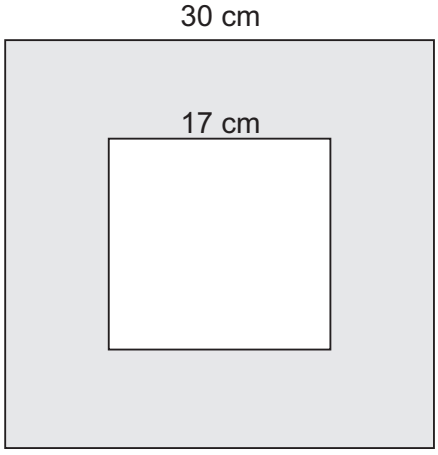
35. If two interior angles on the same side of the transversal intersecting two parallel lines are in the ratio 2 : 3, then the greater of the two angle is

(1) 54°
(2) 108°
(3) 120°
(4) None of these

36. Rani writes 3 pages per hour. How many hours will Rani have to spend writing this week in order to have written a total of 33 pages?

(1) 11 hrs (2) 22 hrs
(3) 10 hrs (4) None of these

37. What is the area of the shaded region?

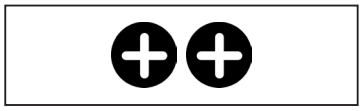


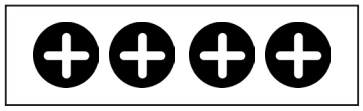
(1) 47 square cm
(2) 611 square cm
(3) 600 square cm
(4) None of these

38. Use counters to subtract 2 – 2.
You start with:

You subtract:

Which counters show the difference?

(1) 

(2) 

(3) 

(4) None of these

39. Find and correct the errors in the following mathematical statements.

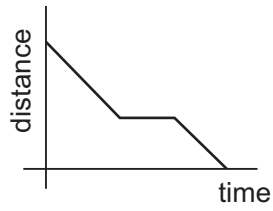
$$x(3x + 2) = 3x^2 + 2$$

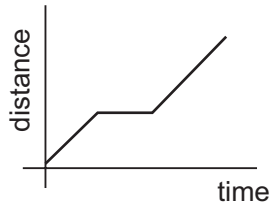
(1) $x(3x + 2) = 3x^2 + 2x$
(2) $x(3x + 2) = 3x^2$
(3) $x(3x + 2) = 5x^2 + 2x$
(4) None of these

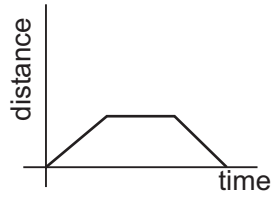
40. A rectangular paper of width 7 cm is rolled along its width and a cylinder of radius 20 cm is formed. Find the volume of the cylinder.
(1) 8800 cm
(2) 8800 cm^2
(3) 8800 cm^3
(4) None of these

INTERACTIVE SECTION

41. Latika drove at a constant speed for 2 hours. He then stopped for an hour to do shopping and have a rest and then drove back home driving at a constant speed. Which graph best represents the changes in the distance from home as Latika was driving?

(1) 

(2) 

(3) 

(4) None of these

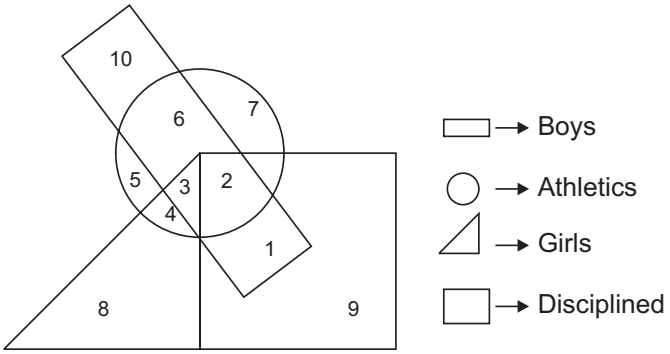
42. Two balls one is white and another is black rotate along a circular track. White ball makes 2 full rotations in 26 mins. Black ball makes 5 full rotations in 35 mins. If they start rotating now from the same point, when will they be at the same starting point again?
(1) After 1 hr 31 mins
(2) Before 1 hr
(3) Can't say
(4) None of these

43. In a Math class, there are three girls and five boys. The teacher asks a volunteer to come to the board. What is the probability that the student is a girl?
(1) 3
(2) $\frac{3}{5}$
(3) $\frac{3}{8}$
(4) None of these

44. An express train from Gwalior to Chandigarh runs every 5th day. If train went on Tuesday, after how many days will train go on a Wednesday?

(1) 20 days
(2) 13 days
(3) 15 days
(4) None of these

45. In the following diagram the boys who are athletic and are disciplined are indicated by which number?

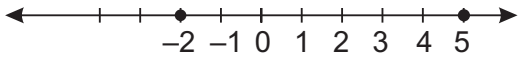


(1) 1
(2) 2
(3) 10
(4) None of these

46. You flip a coin and roll a dice. How many outcomes are possible?

(1) 1
(2) 6
(3) 12
(4) None of these

47. Which interval notation is the set of all real numbers that is represented by this graph?



(1) (–2, 5)
(2) (2, 5)
(3) (2, –5)
(4) None of these

48. In a cup there are 4 quarters, 5 dimes, 6 nickels and 10 pennies. If one coin is selected at random, what is the probability that the coin has a letter "*n*" in its name?

(1) $\frac{6}{25}$
(2) $\frac{16}{25}$
(3) $\frac{9}{16}$
(4) None of these

49. A clock strikes once at 1 O'clock, twice at 2 O'clock, thrice at 3 O'clock and so on. How many times will it strike in 24 hrs?

(1) 78
(2) 136
(3) 156
(4) None of these

50. There are 100 students in a dormitory. Food for all of them is for 20 days. If 25 more students join them, then food available will last:

(1) 4 days
(2) 16 days
(3) 20 days
(4) None of these

END OF THE EXAM