Divya Ma'am Doon Sainik School

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Class 7+8 (Sainik + Military +RIMC)
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Maximum Marks: 60

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FILL IN THE DETAILS

Candidate Name: _____

Class: _____ Section: _____

CREST ID: _____

1. Look at the figure given below. Find the value of x in the given figure:
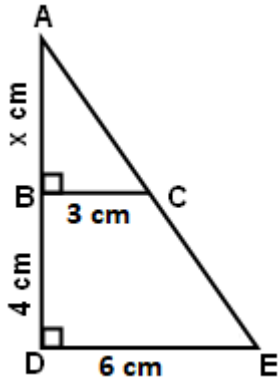
   a. 2 cm   b. 3 cm

   c. 4 cm   d. 6 cm

2. The product of three integers is -600. If two of the integers are -15 and 10, then find the third integer.

   a. -5   b. 1

   c. 3   d. 4

3. In a class test containing 10 questions, 5 marks are given for every correct answer and (-2) marks are given for every incorrect answer and 0 for question not attempted.

   Alice did five correct and five incorrect answers. What will be her score?

   a. 0 mark   b. 8 marks

   c. 15 marks   d. 20 marks

4. The given bar graph shows the number of pupils who participated in the fitness test on different days of the week.

   What percentage of the total number of pupils had their fitness test on Wednesday?
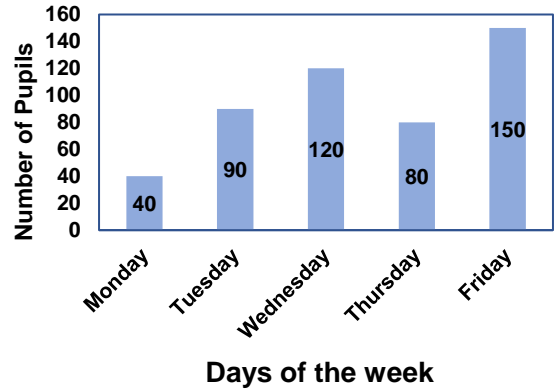
   a. 30%   b. 25%

   c. 60%   d. 50%

5. Michel says that she got 16 more marks than 4 times the number of marks scored by Alexa. Form an equation which gives the marks scored by Alexa if Michel scored 72 marks:

   a. $16x + 4 = 72$

   b. $16 + 4x = 72$

   c. $16x + 72 = 4$

   d. $72 + 4x = 16$

6. Anderson was measuring a piece of cloth of length 2.5 m but by mistake, he measured its length as 255 cm. Find the change in percentage in measuring its length:

   a. 1.5%   b. 2.5%

   c. 2%   d. 1%

7. Given that a pizza has a radius of 6 inches and has 6 slices, what is the perimeter of one of the slices of pizza?

   a. $(\pi + 6)$ in   b. $2(\pi + 6)$ in

   c. $(\pi + 8)$ in   d. $2(\pi + 8)$ in

8. The score of Fernandes in Mathematics is 25 more than the two-third of her score in science. If she scored x marks in science, then determine her score in Mathematics:

a. $\left(\frac{3}{2}\right)x + 25$ b. $\frac{2}{3} + 25x$

c. $\left(\frac{2}{3}\right)x + 25$ d. $\frac{3}{2} + 25x$

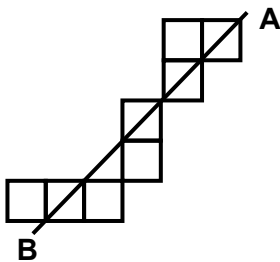9. The perimeter of a triangle is (7x - 15) cm. The two sides are (3x - 3) cm and (2x - 2) cm. Find the third side:

   a. 3x - 13   b. 2x - 14
   c. 2x - 10   d. 3x - 15

10. Harry wants to solve the following equation and find the value of n. If $\frac{9^n \times 3^5 \times 27^3}{3 \times 81^4} = 27$, then the value of n is:

   a. 0   b. 2
   c. 3   d. 4

11. Which is the least number of squares that must be added so that the line AB becomes a line of symmetry?

   a. 3   b. 4
   c. 5   d. 6

12. Sia is a fashion designer who received an order to sew 24 designer tees. If 24 designer tees of equal size can be made from 54 metres of fabric, how much fabric is needed for each designer tee?

   a. $\frac{4}{5}$ b. $\frac{5}{4}$
   c. $\frac{4}{9}$ d. $\frac{9}{4}$

13. Angelina has a beautiful estate; she was telling the cost of her estate to her friend in the following way of conversation. If $\frac{3}{4}$ of an estate is worth

$90,000, then the value of $\frac{2}{3}$ of the same will be:

   a. $60,000   b. $65,000
   c. $70,000   d. $80,000

14. If a and b are positive integers such that $a^b = 125$, then $(a - b)^{a + b - 4}$ is equal to:

   a. 16   b. 25
   c. 28   d. 30

15. Two trains approach each other at 30 km/hr and 27 km/hr from two places 342 km apart. After how many hours do they meet?

   a. 5 hours   b. 6 hours
   c. 7 hours   d. 12 hours

16. Fill in the blank:

   A run twice as fast as B and B runs thrice as fast as C. The distance covered by C in 72 minutes will be covered by A in _____.

   a. 18 min   b. 24 min
   c. 16 min   d. 12 min

17. The degree measure of each of the three angles of a triangle is an integer. Which of the following could NOT be the ratio of their measures?

   a. 2 : 3 : 4   b. 3 : 4 : 5
   c. 5 : 6 : 7   d. 6 : 7 : 8

18. Look at the image given below in which PQ = QR = PS. Calculate the size of the labelled angles:
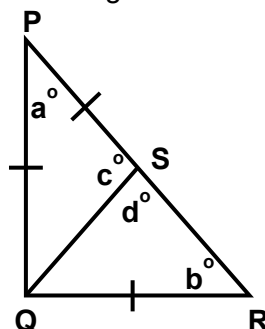
a. a = 40°, b = 50°, c = 70°, d = 110°
b. a = 42°, b = 48°, c = 69°, d = 111°
c. a = 45°, b = 45°, c = 67.5°, d = 112.5°
d. a = 50°, b = 40°, c = 65°, d = 115°

19. Jerry has a parallelogram-shaped plot, and she wants to grow tomatoes in one section of it. She has estimated the plan, and she knows that the ratio of two adjacent sides of a parallelogram is 3: 4. It has a perimeter of 105 cm. If the altitude corresponding to the larger side is 15 cm, find its area:

a. 900 cm²   b. 600 cm²
c. 300 cm²   d. 450 cm²

20. Anderson has a finite number of candies, of which he gave $\frac{2}{x}$ to his friend Niel and $\frac{3}{x}$ to his friend Max. If $\frac{2}{x} + \frac{3}{x} = \frac{35}{4}$, what is the value of x?

a. $\frac{5}{11}$ b. $\frac{7}{4}$
c. $\frac{4}{7}$ d. $\frac{11}{5}$

21. In a parallelogram PQRS, the diagonals PR and QS intersect at O. If ∠POQ = 110°, ∠PRQ = 50°, and ∠SQP = 40°, then find the measure of ∠PSR:

a. 90°   b. 100°
c. 110°   d. 120°

22. Rehman scored 40, 27, 32 and x marks in four different subjects. The maximum mark in each subject is 50. If the average percentage of marks is 70%, then find the value of x:

a. 41   b. 40
c. 39   d. 42

23. Andry is a contractor; He used to build a house and sell it. He sold a building for $125,000 losing 20%. Find the cost price of the building:
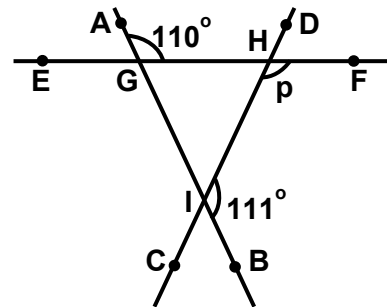
a. $150,000   b. $156,250
c. $156,500   d. $155,250

24. The marks obtained by 11 students of a class in an examination out of 25 are given below.
23, 20, 23, 19, 21, 13, 13, 23, 16, 13, 20.
Find the mean of the following data.

a. 16.22   b. 17.52
c. 18.54   d. 20.72

25. Look at the image given below. The measure of ∠p is:

a. 41°   b. 70°
c. 69°   d. 139°

26. The product of two rational numbers is $\frac{15}{16}$. If one of the numbers is $\frac{5}{4}$ then what is the other number?

a. $\frac{75}{54}$ b. $\frac{25}{64}$
c. $\frac{3}{4}$ d. $\frac{25}{4}$

27. For construction of a △PQR, where QR = 8 cm, PR = 10 cm and ∠Q = 90°, its step for construction is given below in jumbled form. Identify the second step from the following.
1. At point Q, draw an angle of 90°.
2. From R cut an arc of length PR = 10.0 cm using a compass.
3. Name the point of intersection of the arm of the angle 90° and the arc drawn in step 3, as P.

4. Join P to Q. PQR is the required triangle.
5. Draw the base side QR = 8 cm.

a. 2   b. 1
c. 4   d. 5

28. ABCD is a rhombus with ∠ABC = 56°. Find the value of ∠ACD where AC is the diagonal of the rhombus ABCD:

a. 50°   b. 62°
c. 124°   d. 82°

29. Ricky came up with the number m and gave the equation below.
Given that $m^2 = 27^{2/3} \times 16^{-3/2}$, find the value of m.

a. $\dfrac{9}{26}$ b. $\dfrac{3}{16}$
c. $\dfrac{3}{8}$ d. $\dfrac{3}{4}$

30. Kate has $P. Anna has $3 more than Kate and Alice have $7 less than Anna. Altogether the three boys have $20. How much money does Kate have?

a. $30   b. $10
c. $7   d. $3

31. Duke bought two ropes and a 7 m long rope is 1/5th of the length of another rope. How long is the second rope?

a. 5 m   b. 7 m
c. 14 m   d. 35 m

32. Reckson asked his friend to find the value of x and provided the following clues: 2y = -6 and x - 3y = 13, so the value of x is:

a. $\dfrac{13}{9}$ b. 4
c. 19   d. 22

33. Max and Reh each drew a line segment. What is the condition for them to be congruent?

a. They should be drawn on the same sheet of paper.
b. They should be drawn with a scale.
c. They should have the same length.
d. They should have different lengths.

34. Serena used to bake cakes and wrap them in boxes when she worked as a baker. By determining the shape of the box, can you identify the number of edges and vertices it has?

a. 8, 10   b. 12, 8
c. 6, 8   d. 8, 10

35. Sam and Milo were doing an experiment using a solid object and a bulb. Milo got things going first. A light is kept on directly above the book. Name the shape of the obtained shadows.


a. Circle   b. Square
c. Rectangle   d. Semicircle

36. Seven times a number is twelve less than thirteen times the same number. Choose the correct form of equation for the above from the following options.

a. 7x = 12 - 3x
b. 7x - 12 = 13
c. 7x = 13x - 12
d. 7x + 12 = - 13x

37. The width of the rectangle is $\frac{2}{3}$ of its length. If the perimeter of the rectangle is 80 cm. Find its area.

   a. 206 cm^2 b. 384 cm^2
   c. 416 cm^2 d. 466 cm^2

38. One angle of triangle ABC is 40° in the figure below. If the difference between the other two angles is 30°, find the larger of the two angles.

   a. 76º   b. 85º
   c. 89º   d. 96º
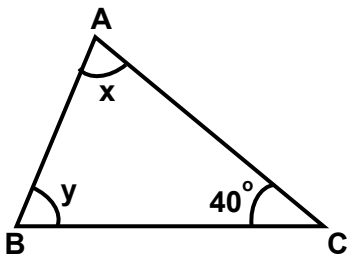
39. Anderina went to a fare with her friends Tofu and Tia. It was summer, so they bought hats to wear. How many letters in the word HAT have symmetrical lines?

The line which divides a line segment into two equal halves and perpendicular to it is called as _____.

   a. 0   b. 1
   c. 2   d. 3

40. Two triangles ABC and PQR are similar, if BC : CA : AB = 1 : 2 : 3, then $\frac{QR}{PR}$ is _____.

   a. $\frac{2}{3}$ b. $\frac{4}{5}$
   c. $\frac{1}{2}$ d. $\frac{1}{3}$

Achievers' Section (Each Question is 2 Marks)

41. Ronaldo challenged his friends to generate three rational numbers ranging from $\frac{3}{5}$ to $\frac{7}{8}$. Kate also wondered how many rational numbers can be determined from these two numbers.

   a. 12   b. 67
   c. 54   d. Infinite

42. In the given figure, △ABC is a right-angled triangle, semicircles are drawn on AB, AC and BC as diameters. It is given that AB = 3cm and AC = 4 cm. Find the area of the shaded region:
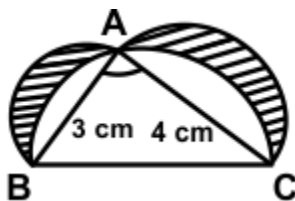
   a. 12 cm^2 b. 6 cm^2
   c. 9 cm^2 d. 15 cm^2

43. Product of three natural numbers is 24000 and their HCF is 10. How many such triplets of numbers are there?

   a. 5   b. 4
   c. 6   d. 7

44. Margaret bought two necklaces for $1008. she sold one at a loss of 20% and the other a profit of 44%. If each necklace was sold for the same price, the cost price of the necklace which was sold at a loss was:

   a. $648   b. $360
   c. $568   d. $440

45. The mean of the marks in Statistics of 100 students in a class was 72. The mean of marks for boys was 75, while their number was 70. The mean of marks of girls in the class was:

a. 35   b. 65
c. 68   d. 86

46. Which of the following statements are true?
  i. If P = 3x − 4y − 8z, Q = −10y + 7x + 11z and R = 19z − 6y + 4x, then P − Q + R is equal to 0.
  ii. After Subtracting − x^4 + $4x^3y$ - $8x^2y^2$ + $2xy^3$ - $4y^4$ from − $5x^3y$ + x^2y^2 - $6y^4$ we get, x^4 − $9x^3y$ + $9x^2y^2$ − $2xy^3$ + $2y^4$.
  iii. Terms in algebraic expression which has the different power of variables is called like terms.

  a. i and ii   b. only i
  c. i, ii and iii   d. only iii

47. Angelina and his buddy Alice were playing a dice game with a regular die. The game's rules are If the number that appears is an even number, they will receive 5 times the number that appears. If they get an odd number, they will lose 12 times the number that comes up. Angelina tosses a five. Indicate her outcome as an integer.

  a. - 60   b. 60
  c. - 30   d. 30

48. A worker is hired for 20 days with the understanding that he will be paid $280 per day worked and fined $60 per day absent. How many days did he miss if he received a total of $2540?

  a. 10   b. 9
  c. 8   d. 7

49. Alex was decorating his house for Christmas, and he wanted to put a star-shaped lamp there, so he bought a 15-meter-long ladder that reached a window 12 metres above the ground by placing it against a wall at a distance of a. Determine the distance between the ladder's foot and the wall.

  a. 6 m   b. 7 m
  c. 9 m   d. 11 m

50. Given two right angled triangle ABC and YZ, such that ∠A = 20°, ∠Y = 20° and AC = YX, Write the correspondence if triangles are congruent.

  a. △ABC ≅ △XYZ
  b. △ABC ≅ △XZO
  c. △ABC ≅ △ZOX
  d. △ABC ≅ △YZX