MATHS

BOOKS - R G PUBLICATION

MODEL PAPER 1

Exercise

1. The decimal expansion of $\frac{17}{8}$ will terminate after how many places of decimals:

A. 1

B. 2

C. 3

D. will not terminate

Answer:

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2. The quadratic polynomial whose sum of zeroes is 3 and product of zeroes is -2 is:

A. $x^2 + 3x - 2$

B. $x^2 - 2x + 3$

C. $x^2 - 3x + 2$

D. $x^2 - 3x - 2$

Answer:

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3. The pair of linear equation 2x-3y=1 and 3x-2y=4 have:

A. One solution

B. Two solutions

C. No solution

D. Many solutions

Answer:

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4. If one root of the equation $2x^2 - 10x + p = 0$ is 2 then the value of p is

A. -3

B. -6

C. 9

D. 12

Answer:

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5. Ifa,a-2 and 3a are in A.P., then the value of a is:

A. -3

B. -2

C. 3

D. 2

Answer:

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6. If the angle between radii of a circle is 100°, the angle between the tangents at the ends of those radii is:

A. 50°

B. 60°

C. 80°

D. 90°

Answer:

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7. $\Delta ABC \sim \Delta DEF$, and their areas are $64cm^2$ and $121cm^2$ respectively. If EF=15.4 cm then BC is

A. 11.0 cm

B. 11.2 cm

C. 11.4 cm

D. 11.6 cm

Answer:

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8. If $\cos(40^\circ + A) = \sin 30^\circ$, then the value of A is

A. 30°

B. 40°

C. 60°

D. 20°

Answer:

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9. The value of $\sin^2 30^\circ - \cos^2 30^\circ$ is:

A. $-\frac{1}{2}$

B. $\frac{\sqrt{3}}{2}$

C. $\frac{3}{2}$

D. $\frac{2}{3}$

Answer:

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10. The median of a given frequency distribution is found with the help of

a)Histogram b)Frequency curve c)Frequency Polygon d)Ogive

A. Ogive

B. Histogram

C. Frequency polygon

D. Frequency curve

Answer:

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11. Is $7^5 \times 3^2 \times 5 + 3$ a composite number? Justify the answer.

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12. Find the zeroes of the polynomial $4\sqrt{3}x^2 - 5x - 2\sqrt{3}$.

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13. If the zeroes of the polynomial $x^2 - 5x + k$ are the reciprocal of each other, then find the value of k.

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14. Three angles of a triangle are x,y and 40°. The difference between the two angles x and y is 30°. Find x and y.

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15. Prove that $\frac{\cos A}{1+\sin A} + \frac{1+\sin A}{\cos A} = 2\sec A$.

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16. If A,B,C are the interior angles of ABC, then prove that $\cos\left(\frac{A+B}{2}\right) = \sin\left(\frac{C}{2}\right)$.

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17. Prove that $\sqrt{5}$ is irrational.

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18. If α and β are the two zeroes of the quadratic polynomial $x^2 - 3x + 7$, find a quadratic polynomial whose zeroes are $\frac{1}{\alpha}$ and $\frac{1}{\beta}$.

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19. Prove that $\frac{1-\sin\theta}{1+\sin\theta} = (\sec\theta - \tan\theta)^2$.

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20. Prove that in a right traiangle, the square of the hypotemuse is equal to the sum of the squares of the other two sides.

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21. Show that any positive even integer is of the form 6q, 6q+2 ,6q+4.

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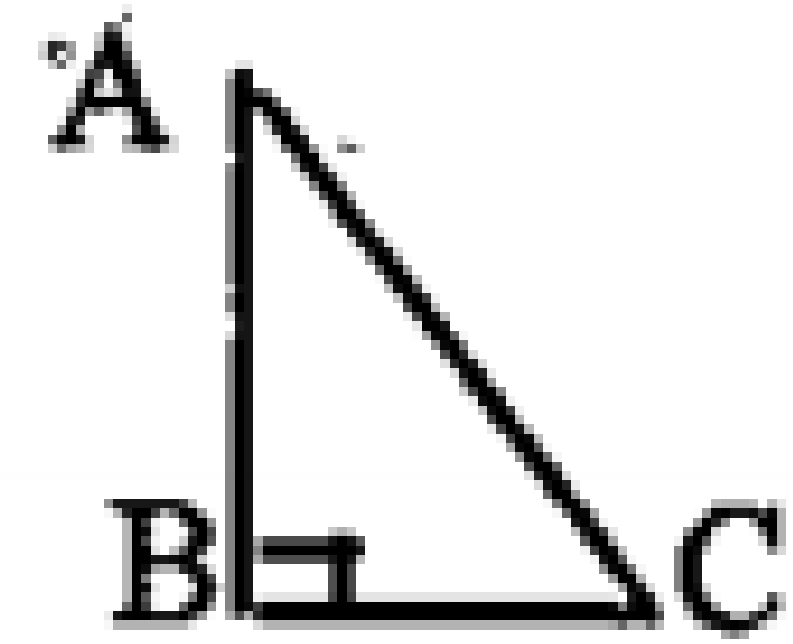
22. In the figure ,ΔABC is right angles at B, BC=7cm and AC-AB=1cm. Find the value of cosA+sinA.



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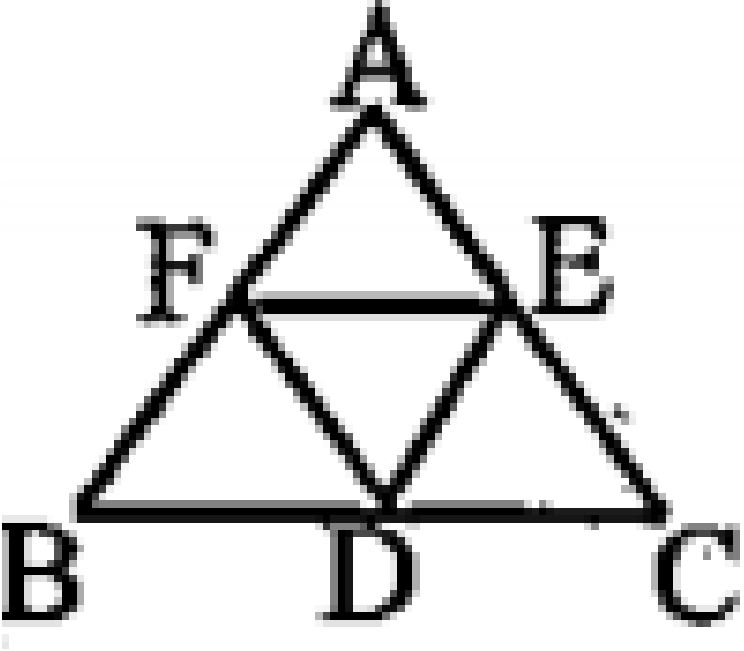
23. In figure D,E,F are midpoints of sides BC,CA,AB respectively of ΔABC.

Find ratio of areas of ΔDEF to area of ΔABC.



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24. Find the coordinates of a point A,where AB is the diameter of a circle whose centre is (2,-3) and B is (1,4).

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25. 2 cubes each of volume $64cm^3$ are joined end to end.Find the surface area of the resulting cuboid.

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26. Prove that parallelogram circumscribing a circle is a rhombus.

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27. In what ratio does the x-axis divide the line segment joining the points (-4,-6) and (-1,7). Also find the coordinates of the point of division.

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28. If all the sides of a parallelogram touch a circle, show that the parallelogram is a rhombus.

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29. AB and CD are two parallel tangents to a circle with centre O. ST is a tangent segment between the parallel tangents touching the circle at Q. Show that $\angle SOT = 90^\circ$

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30. The angle of elevation of an aeroplane from a point A on the ground is 60°. After a flight' of 30 seconds, the angle of elevation changes to 30°. If the plane is flying at a constant height of $3600\sqrt{3}m$, find the speed of the plane in km/hour.

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31. A well of diameter 3 m is dug 14 m deep.They earth taken out of it has been spread evenly all around it to a width of 4 m to from an embankment. Find the height of the embankment (Use...$\pi = \frac{22}{7}$).

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32. Without using trigonometric tables, evaluate the following:

$$\frac{\sec 37^\circ}{\cos ec53^\circ} + 2\cot 15^\circ \cot 25^\circ \cot 45^\circ \cot 75^\circ \cot 65^\circ - 3\left(\sin^2 18^\circ + \sin^2 72^\circ\right.$$

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33. A bag contains 5 white balls, 7 red balls, 4 black balls and 2 blue balls. One ball is drawn at random from the bag. What is the probability that the ball drawn is: white or blue.

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34. A bag contains 5 white balls, 7 red balls, 4 black balls and 2 blue balls. One ball is drawn at random from the bag. What is the probability that the ball drawn is: not white

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35. A bag contains 5 white balls, 7 red balls, 4 black balls and 2 blue balls. One ball is drawn at random from the bag. What is the probability that the ball drawn is: neither white nor black.

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