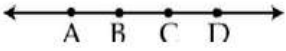


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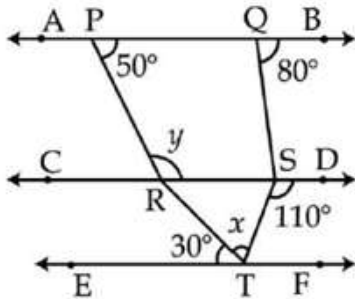
SUMMATIVE ASSESSMENT - I, 2016-17 MATHEMATICS Class - IX Question paper -1 [Code: 8KK300S]

- 1 Which is the greatest among $\sqrt{2}$, $\sqrt[3]{4}$ and $\sqrt[4]{3}$?
- 2 If $x + y = 5$ and $xy = -1$ then find the value of $x^2 + y^2$.
- 3 What can you say about a pair of complementary angles ?
- 4 In which quadrant or axis does the point $(0, -2)$ and $(3, 0)$ lies ?
- 5 If $x = \sqrt{2} + 1$, then find the value of $x - \frac{1}{x}$.
- 6 Factorise : $2x^2 - 5x - 3$
- 7 In the figure if $AB = CD$, prove that $AC = BD$. State Euclid axiom, which is applicable here.
- 
- 8 In a triangle ABC, if $AB = AC$ and $\angle BAC = 80^\circ$, then find $\angle ABC$.
- 9 Write coordinates of points which are reflections of the point $(-3, -4)$ in x -axis and y -axis.
- 10 In a rhombus, lengths of diagonals are 400 m and 410 m. Find the area and side of the rhombus.
- 11 Let a and b be rational and irrational numbers respectively. Is $a + b$ an irrational number ? Justify your answer.
- 12 If $x = 2 + \sqrt{3}$; find the value of $x^2 + \frac{1}{x^2}$.
- 13 Using a suitable identity, evaluate $(42)^3 - (18)^3 - (24)^3$.
- 14 Using factor theorem, factorise $x^2 - 7x + 12$.
- 15 Write any Three Euclid's Postulate.
- 16 WXYZ is a quadrilateral whose diagonals intersect each other at the point O such that $OW = OX = OZ$. If $\angle OWX = 50^\circ$, then find the measure of $\angle OZW$.
- 17 Prove that if two lines intersect, vertically opposite angles are equal.
- 18 Locate the points $A(-4, 2)$, $B(2, 2)$, $C(3, -4)$, $D(2.5, 1.5)$, $E(0, 3.5)$, $F\left(\frac{9}{2}, 0\right)$, $G\left(0, \frac{-3}{2}\right)$ and $H(-7, -3)$ in the cartesian plane.
- 19 A triangle and a parallelogram stand on the same base and are equal in area. If the sides of the triangle are 40 cm, 24 cm and 32 cm and base of the parallelogram is 40 cm, find the corresponding height of the parallelogram.

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20



In the given figure, if $AB \parallel CD \parallel EF$,
find the value of $(y - x) : (y + x)$:

21

Rationalise the denominator of $\frac{1}{\sqrt{2} + \sqrt{3} + \sqrt{5}}$.

22

Represent $\sqrt{13}$ on number line geometrically. Verify using mathematically.

23

If $p(x) = x^2 + bx - 6$ leaves a remainder 36, when divided by $x - 3$, find the value of 'b' and with this value of b, factorise $p(x)$.

24

If both $(x - 2)$ and $(x - \frac{1}{2})$ are factors of $px^2 + 5x + r$, show that $p = r$.

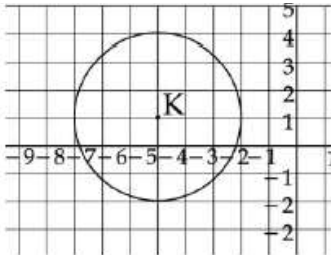
25

Verify if -2 and 3 are zeroes of the polynomial $2x^3 - 3x^2 - 11x + 6$. If yes, factorise the polynomial.

26

Prove that $(a + b + c)^3 - a^3 - b^3 - c^3 = 3(a + b)(b + c)(c + a)$

27

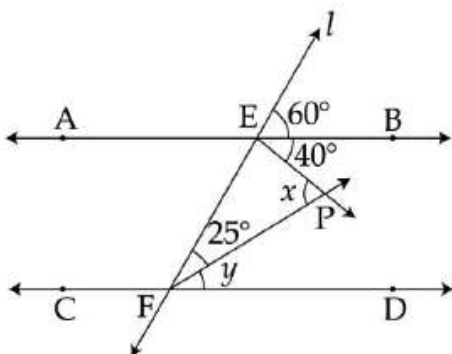


A circular pond in a village is full of fishes. Rohan everyday feeds the fishes. What value is he exhibiting by doing so? With centre as K in the figure how many circles can be drawn? State Euclid Axiom which supports this statement. Also give two axioms of Euclids.

28

Sunil and Shyam have the same weight. If they each gain weight by 5 kg, how will their new weights be compared using the axioms? Write the Euclid's axiom that best supports your answer. Also give two more axioms other than the axiom used in the above situation.

29



In the adjoining figure, $AB \parallel CD$
and l is a transversal. Find values of x and y

30

If the altitudes AD , BE and CF of a ΔABC are equal, prove that ABC is an equilateral triangle.

31

The angles of a triangle are $(x - 40)^\circ$, $(x - 20)^\circ$ and $(\frac{x}{2} - 10)^\circ$. Find the value of x and then the angles of the triangle.