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MODEL QN PAPER –WITH ANSWERS

GOVERNMENT URDU HIGH SCHOOL YALAGONDAPALYA

[NEELSANDRA]

SUBJECT: MATHEMATICS 2018 – 19

SUMMATIVE ASSESMENT - 1

Class : 9th *Marks:40*

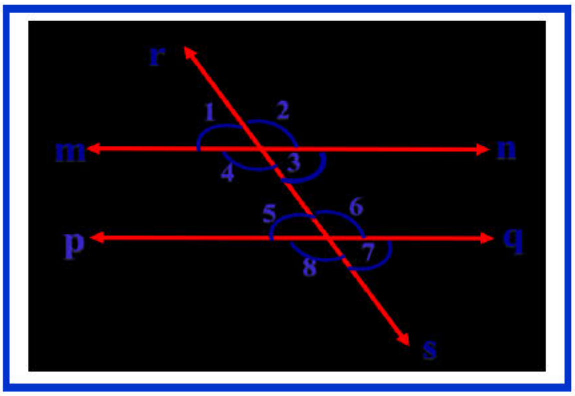
I. Answer the following [mcq] 1 x 7 = 7

1. Write the following in Decimal form. $\frac{1}{11}$

A] 0.6 B] 0.7 C] 0.8 D] 0.9

2. All right angles are equal to one another. Name the postulate

A] Postulate 1 B] Postulate 2 C] Postulate 3 D] Postulate 4



3. Name the corresponding angles

A] $\angle 1$ and $\angle 3$ B] $\angle 1$ and $\angle 2$

C] $\angle 1$ and $\angle 4$ D] $\angle 1$ and $\angle 5$

4.If a transversal intersects two lines such that either

[a] any one pair of corresponding angles is equal , or

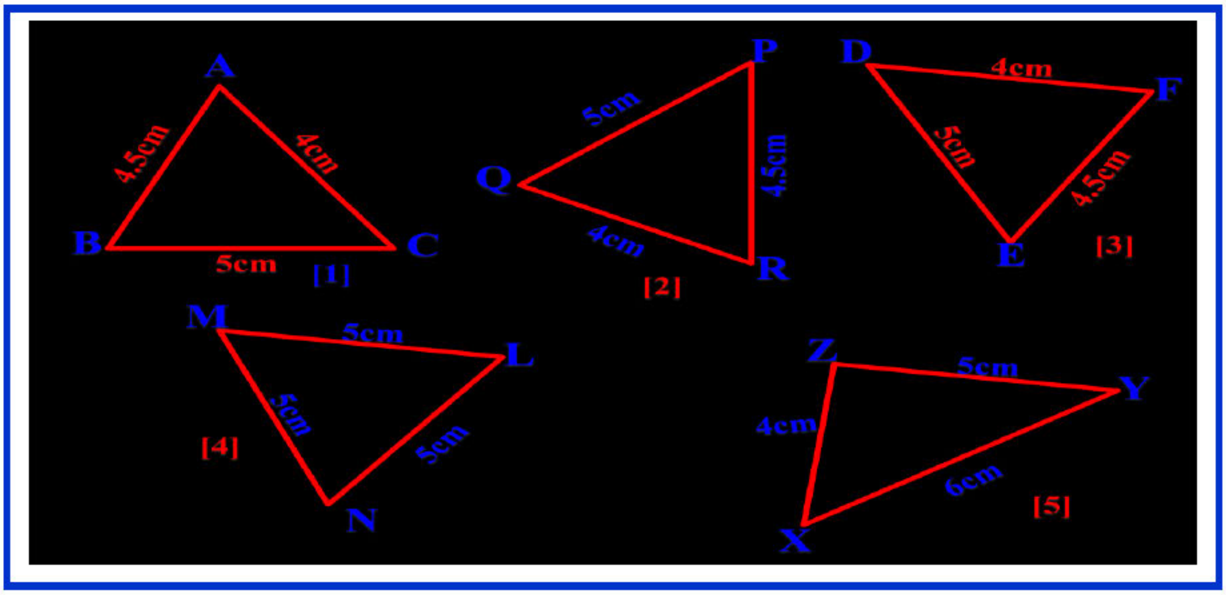
[b] any one pair of alternate interior angles is equal , or

[c] any one pair of interior angles on the same side of the transversal is supplementary, then the lines are Parallel. [d] All the three.

5. The degree of the polynomial is : $x^5 - x^4 + 3$

A] 2 B] 3 C] 4 D] 5

6. Which of the triangles given below are congruent to triangle ABC in fig 1?



A] fig 2 & 5 B] fig 3 & 4 C] fig 4 & 5 D] fig 2 & 3

7. In a parallelogram

A] opposite sides are equal B] opposite angles are equal

C] diagonals bisect each other D] All the three

Answer the following $1 \times 8 = 8$

8. Expand using identity $(\sqrt{5} - \sqrt{3})^2$.

Ans: $(\sqrt{5} - \sqrt{3})^2 = (\sqrt{5})^2 + (\sqrt{3})^2 - 2(\sqrt{5})(\sqrt{3})$

$5 + 3 - 2\sqrt{15} = 8 - 2\sqrt{15}$

9. State Euclid's Postulate 1 and 2.

Ans:- Postulate 1: A straight line may be drawn from any one point to any other point.

Postulate 2 : A terminated line can be produced indefinitely.

10. If a transversal intersects two lines such that a pair of corresponding angles is equal.. Then

Ans: Then the two lines are parallel to each other.

11. Find the value of the given polynomial : $p(x) = 4x^2 - 3x + 7$ at $x = 1$

Ans:- $p(1) = 4(1)^2 + 3(1) + 7 = 4 + 3 + 7 = 14$

12. State Remainder Theorem.

Ans:- If $p(x)$ is any polynomial of degree greater than or equal to 1 and $p(x)$ is divided by the liner

Polynomial $x - a$, then the remainder is $p(a)$

13.State ASA congruence rule.

Ans:- Two triangles are congruent if two angles and the included side of one triangle are equal to two angles

And the included side of the other triangle.

14. The sum of the angles of a quadrilateral is

Ans:- 360°

15. If a ray stands on a line, then the sum of two adjacent angles so formed will be

Ans: 180°

II. Answer the following: *2 x 7 = 14*

16. Find the six rational numbers between 3 and 4 .

Ans: To find the six rational numbers between 3 and 4 denominator should be made equal to $6 + 1 = 7$

Therefore, $3 = \frac{3 \times 7}{7} = \frac{21}{7}$ $4 = \frac{4 \times 7}{7} = \frac{28}{7}$

Six rational numbers between 3 and 4 can found by varying the numerator between

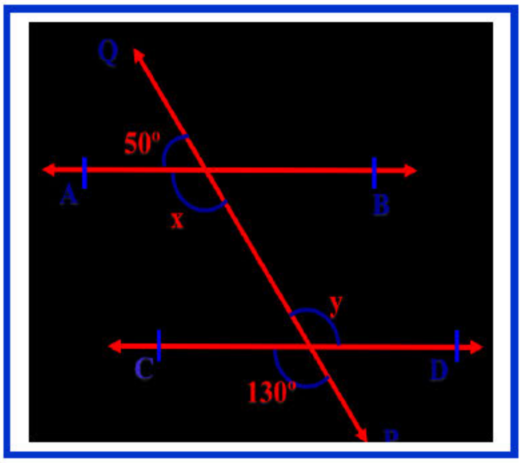
21 and 28 $\frac{22}{7}, \frac{23}{7}, \frac{24}{7}, \frac{25}{7}, \frac{26}{7}, \frac{27}{7}$

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

Ans: $\frac{1}{2+\sqrt{3}} \times \frac{2-\sqrt{3}}{2+\sqrt{3}} = \frac{2-\sqrt{3}}{4-3}$

18. In the fig find the values of x and y and

Then show that AB ∥ CD



Solution:- in the given fig a transversal intersects two lines

AB and CD such that

$x + 50° = 180°$ [linear pair axiom]

$\Rightarrow x = 180° - 50° = 130°$

Y = 130° [Vertically Opposite angles]

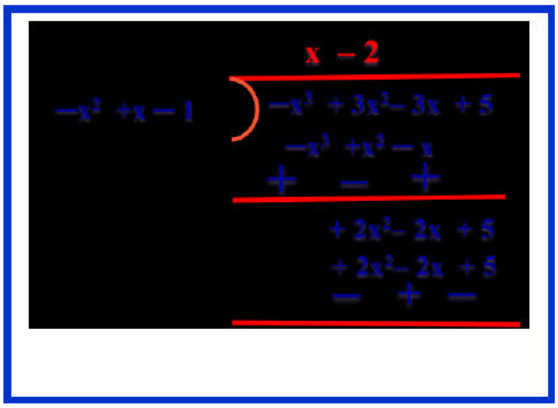
∠ x = ∠ y = 130° [Alternate angles]

∴ AB ∥ CD [Converse of alternate angles axiom] Proved.

19. Divde p(x) by g(x), where $p(x) = -x^3 + 3x^2 - 3x + 5$

and $g(x) = x - 2$.

Solution:-



20. ABC is a triangle in whiih altitudes BE and CF to sides

AC and AB are equal [see fig] show that

(i) Δ ABE ≅ Δ ACF (ii) AB = AC , i.e. , (ii) ABC is an isosceles triangle.

Solution:- In Δ ABE and ACF we have

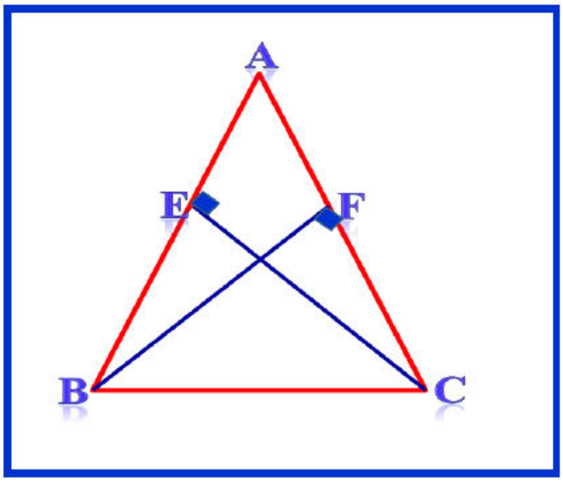
BE = CF [given]

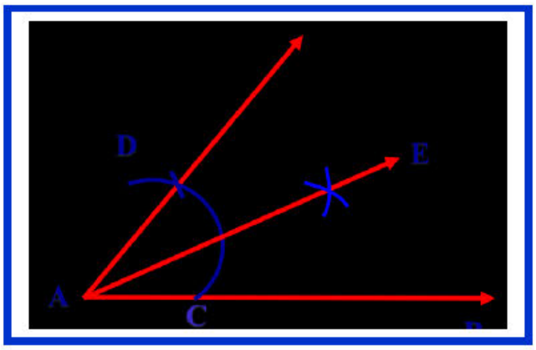
∠ BAE = ∠ CAF [common]

∠ BEA = ∠ CFA [Each 90°]

So Δ ABE ≅ Δ ACF [AAS] Proved.

Also AB = AC [CPCT]





21. Construct the angle of 30°

Stepts of construction:

1. Draw a ray AB, with initial point A.

2. With A as the centre and some convenient radius

, draw an arc intersecting AB at C.

3. With C as the centre and the same radius as before draw another arc intersecting the previously drawn Arc at D.

4. Draw ray AD

5. Now taking C and D as the centres and the radius more than $\frac{1}{2}$ DC

6. Draw arcs to intersect each other at E.

7.Draw ray AE then $\angle$ BAE is the required angle 30°.

22. The angles of a quadrilaterl are in the ratio 3: 5 : 9 : 13. Find all the angles of the quadrilateral

Solution: Let the measure of the four angles are 3x , 5x, 9x, 13x

$\therefore 3x + 5x + 9x + 13x = 360°$

$\Rightarrow 30x = 360° \quad \Rightarrow \quad x = \frac{360°}{30} = 12°$

$3x = 3 \times 12 = 36°$, $5x = 5 \times 12 = 60°$, $9x = 9 \times 12 = 108°$, $13x = 13 \times 12 = 156°$

The angles of quadrilaterals are 36° , 60°, 108°, 156°

II. Answer [Any One] the following: $3 \times 1 = 3$

23. Prove that Angles opposite to equal sides of an isosceles triangle are equal or [Theorem 5.2 page 94]

23[a] Show that the diagonals of a rhombus are perpendicular to each other.[page 124] OR

23[b] Factorise : $8x^3 + y^3 + 27z^3 - 18xyz$ [page No 79]

II. Answer the following: $4 \times 2 = 8$

24. Factorise $x^3 - 23x^2 + 142x - 120$ [page – 74] OR

Prove that The sum of the angles of a triangle is 180° [page 55]

25. Construct a triangle ABC, in which $\angle$ B = 60° , $\angle$ C = 45° , and AB + BC + CA = 11cm. [page 115] OR

25(a) Expand using suitable identity: [i] $(2x + 3y + 4z)^2$ [ii] $\left(\frac{3}{2}x + 1\right)^3$ OR

25[b] Divide the polynomial $3x^4 - 4x^3 - 3x - 1$ by $x - 1$ [by long division page No 69]

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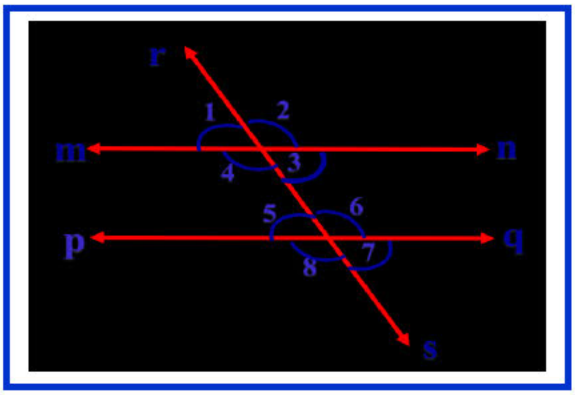

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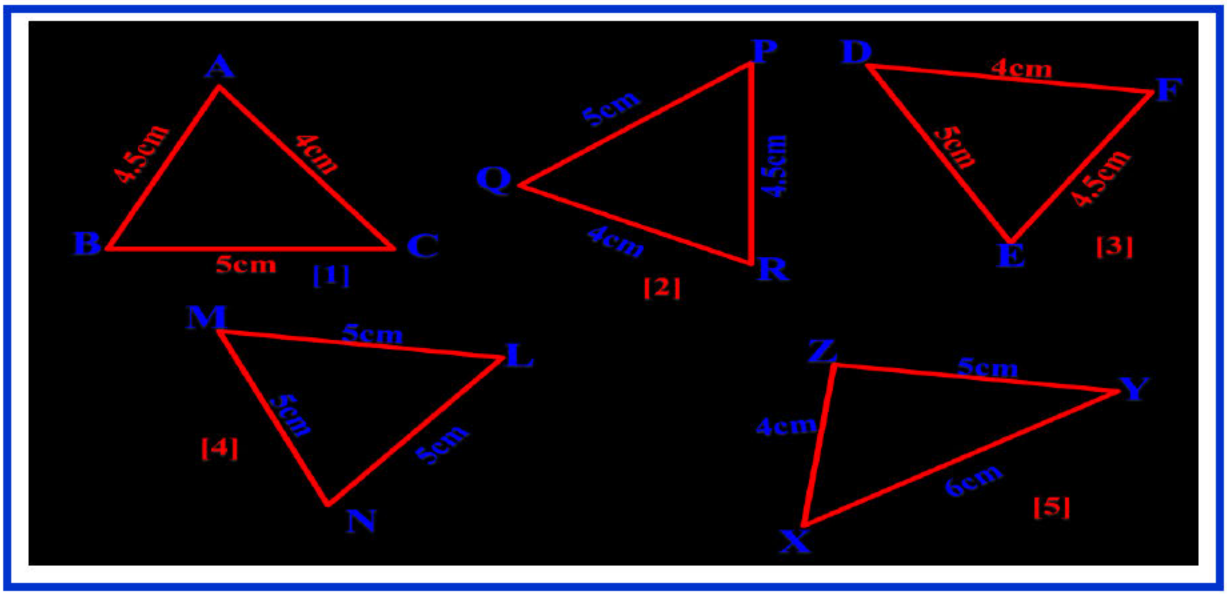

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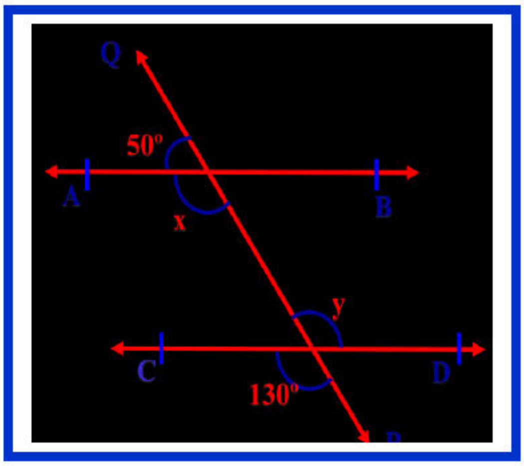

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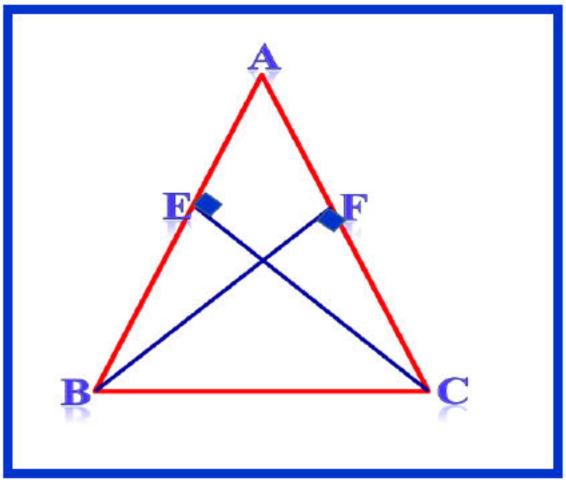

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