Name: _____   Roll No. _____

SIDDEEQ PUBLIC SCHOOL

ENTRY TEST ... **49**   **MATHEMATICS**   Max. Marks:**35**   ADMISSION to GRADE: **8**

Checked by	Srv #	Sign:	Rechecked by	Srv #	Sign:	Marks:

1. Complete the following mathematical statements. (1.0×4)

(i) If A= {1,2}, B = {2} then A ∪ B = _____.

(ii) Multiplicative inverse of zero is _____.

(iii) (q + p) × _____ = $q^2 - p^2$

(iv) If a car is travelling at the speed of 35 *m*/s then the speed in *km/h* is _____.

2. Name & verify the property. $\frac{-8}{12} \times (\frac{-1}{4} + \frac{1}{2}) = (\frac{-8}{12} \times \frac{-1}{4}) + (\frac{-8}{12} \times \frac{1}{2})$ (4.0)

Name of property: _____

Verification: _____

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3. If diameter of a circle is 112 *cm*, find its area. (Use $\pi \approx \frac{22}{7}$)   (4.0)

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4. If P:Q= 3: 4 , Q:R = $\frac{1}{4}$: $\frac{1}{8}$ (4.0) | **5. Evaluate: $(3m - 4n)^2$**
   then find P:Q:R | **by using suitable identity .**   (4.0)

6. When the numerator of a fraction is 4 less than its denominator, the fraction becomes $\frac{3}{7}$. Find the numerator and denominator.   (5.0)

(Write an equation for the given situation & find the solution)

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7. The area of a square-shaped field is 11 025 m^2.
   (a) Find the length of each side.
   (b) Find the cost of fencing around the field at Rs 500 per meter.   (5.0)

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8. The radius of circular garden is 35m. How much distance will Ali cover, if he takes 5 rounds around it.   ($\pi \approx \frac{22}{7}$ or 3.14)   (5.0)

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Answer Key

Admission to Grade:8

MATHEMATICS

1. (i) {1,2} / Set A /A (ii) Not possible / undefined (iii) (q-p) (iv) 126 *km/h*

2. **Name: Distributive Property of Multiplication over Addition**

L.H.S. $= \dfrac{-8}{12} \times (\dfrac{-1}{4} + \dfrac{1}{2})$

$= \dfrac{-8}{12} \times (\dfrac{-1}{4} + \dfrac{1 \times 2}{2 \times 2})$

$= \dfrac{-8}{12} \times (\dfrac{-1}{4} + \dfrac{2}{4})$

$= \dfrac{-8}{12} \times (\dfrac{-1+2}{4})$

$= \dfrac{-8}{12} \times (\dfrac{1}{4}) = \dfrac{-1 \times 1}{6} = \dfrac{-1}{6}$

R.H.S. $= (\dfrac{-8}{12} \times \dfrac{-1}{4}) + (\dfrac{-8}{12} \times \dfrac{1}{2})$

$= (\dfrac{-1 \times -1}{3 \times 2}) + (\dfrac{-1 \times 1}{3})$

$= \dfrac{+1}{6} + (-\dfrac{1}{3})$

$= \dfrac{1}{6} - \dfrac{1}{3}$

$= \dfrac{1}{6} - \dfrac{1 \times 2}{3 \times 2} = \dfrac{1}{6} - \dfrac{2}{6} = \dfrac{1-2}{6} = \dfrac{-1}{6}$

Result: Hence it is proved that L.H.S.=R.H.S. i.e.

$$\dfrac{-8}{12} \times (\dfrac{-1}{4} + \dfrac{1}{2}) = (\dfrac{-8}{12} \times \dfrac{-1}{4}) + (\dfrac{-8}{12} \times \dfrac{1}{2})$$

3. **Given :** Diameter = 112 *cm*

So , Radius $= r = \dfrac{d}{2} = \dfrac{112cm}{2} = 56cm$

As , Area of circle $= \pi r^2$ *(Using* $\pi \approx \dfrac{22}{7}$*)*

$= \dfrac{22}{7} \times 56cm \times 56cm$

$= \dfrac{22}{7} \times 56 \times 56 \ cm^2$

$= 22 \times 8 \times 56 \ cm^2$

$= 22 \times 448 cm^2 = 9856 cm^2$

So, Area of circle= 9856 *cm²*

4. **Given:** $P:Q = 3:4$

$Q:R = \dfrac{1}{4} : \dfrac{1}{8}$

Step 1 Simplify $Q:R$

$Q:R = 8 \times \dfrac{1}{4} : \dfrac{1}{8} \times 8 = 2{:}1$

Step2 P : Q : R

3 : 4

2: 1
_____
6 : 8 :4

= 3 : 4 :2

So P:Q:R= 3 : 4 :2

5. *(3m-4n)²*

$= (3m)^2 - 2(3m)(4n) + (4n)^2$ *As (a-b)²=a²-2ab+b²*

$= 9m^2 - 24mn + 16n^2$

6. Let the denominator $= x$

Then the numerator $= x - 4$

So, According to given condition; $\dfrac{x-4}{x} = \dfrac{3}{7}$

$$7(x - 4) = 3x$$
$$7x - 28 = 3x$$
$$7x - 3x = 28$$
$$4x = 28 \quad \Rightarrow x = \dfrac{28}{4} \quad \Rightarrow x=7$$

Hence the denominator = 7 & numerator = x-4=7-4 =3

7. Solution: Given; Area of square = **11025 *m²***

As we know that Area of the square = *(length)²*

So, length of the side of square = $\sqrt{Area\ of\ the\ square}$

(a) Length of each side of the square = $\sqrt{11025m^2}$

$$= \sqrt{11025}\ m$$
$$= \sqrt{5 \times 5 \times 3 \times 3 \times 7 \times 7}\ m$$
$$= \sqrt{5^2 \times 3^2 \times 7^2}\ m = \sqrt{5^2} \times \sqrt{3^2} \times \sqrt{7^2}\ m$$
$$= 5 \times 3 \times 7\ m$$
$$= 105\ m$$

So, the length of each side of square shaped field is 105 m

(b) Cost of fencing

First find **perimeter** of square:

$Perimeter = 4 \times Length\ of\ the\ side$

$$= 4 \times 105m = 420\ m$$

$Cost\ of\ fencing\ around\ the\ field = Rate \times Perimeter$

$$= 420m \times Rs\ 500/m$$
$$= Rs\ 210\ 000$$

Hence the Cost of fencing around the field is Rs 210 000

8. Solution: Given: *Radius* = $r = 35\ m$

Distance Ali will cover in 1 round = Circumference of the garden

$As\ Circumference = 2\pi r\ (Using\ \pi \approx \frac{22}{7})$

$$= 2 \times \frac{22}{7} \times 35m$$
$$= 2 \times 22 \times 5m = 220\ m$$

Or $As\ Circumference = 2\pi r\ (Using\ \pi \approx 3.14)$

$$= 2 \times 3.14 \times 35m$$
$$= 219.8\ m$$

So, In one round Ali will cover a distance of 220 m.

Ali will cover the distance in 5 rounds = Circumference × No. Of rounds

$$= 220m \times 5 = 1100\ m$$

Hence, Ali will cover 1100 metres in 5 rounds.

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