NEW AL WUROOD INTERNATIONAL SCHOOL, JEDDAH, K.S.A

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WORKSHEET I

GRADE:VIII – ANNUAL EXAMINATION

SUBJECT: Mathematics

Block - 3, 13, 17, 18, 19, 20

Choose the correct answer:

1. Which of the following is a linear expression?
   (a) $x^2 + 1$ (b) $y + y^2$ (c) 4   (d) $x + 1$
2. 196 is the square of:
   (a) 11   (b) 12   (c) 14   (d) 16
3. The product of a monomial and binomial is a:
   (a) Monomial   (b) Binomial   (c) Trinomial   (d) None of these
4. The sum of -7pq and 2pq is:
   (a) -9pq   (b) 9pq   (c) 5pq   (d) -5pq
5. Which of the following is correct?
   (a) $(a - b)^2 = a^2 + 2ab - b^2$ (b) $(a - b)^2 = a^2 - 2ab + b^2$
   (c) $(a - b)^2 = a^2 - b^2$ (d) $(a + b)^2 = a^2 + 2ab - b^2$

Fill in the blanks:

1. There will be ------ digits in the square root of 350464?
2. Any value of the variable, which makes both sides of an equation equal, is known as a --------------- of the equation.
3. The product of two terms with like signs is a -------------- term.
4. Volume of a rectangular box with length 2x, breadth 3y and height 4z is ------------ .
5. $(103)^2$-$(102)^2 = - - - \times (103 - 102)$.

Answer the following (2-mark questions):

1. Solve: $\frac{x+1}{2x+3} = \frac{3}{8}$
2. Find the value of a, if $8a = 35^2 - 27^2$
3. If $x - \frac{1}{x} = 7$, then find the value of $x^2 + \frac{1}{x^2}$.
4. Find the area of a square length of whose each side is $(4x + 5)m$.

5. Subtract: $2pq(p + q)$ from $3pq(p - q)$.
6. If $p + q = 25$ and $p^2 + q^2 = 225$, then find pq.
7. Factorise: $a^3 + a^2 + a + 1$.

Answer the following (3-mark questions):

1. The digits of a two-digit number differ by 3.If the digits are interchanged and the resulting number is added to the original number, we get 143. What is the original number?
2. A gardener has 1308 plants. He wants to plant these in such a way that the number of rows and the number of columns remain same. Find the minimum number of plants he needs more for this.
3. Find the smallest whole number by which 2028 should be multiplied so as to get a perfect square. Also find the square root of the number so obtained.
4. Use suitable identities to evaluate the following:
   (i) 5.2^2 (ii) 1.05×9.5 (iii) 8.9^2
5. Show that: $\left(\frac{4}{3}m - \frac{3}{4}n\right)^2 + 2mn = \frac{16}{9}m^2 + \frac{9}{16}n^2$.
6. The area of a rectangle is $x^2 - 6x + 8$. Find possible length and breadth.
7. Factorise the expression and divide them as directed: $(x^4 - 16) \div x^3 + 2x^2 + 4x + 8$.
8. Divide:
   (i) $63(p^4 + 5p^3 - 24p^2)$ by $9p(p + 8)$
   (ii) $81x^3(50x^2 - 98)$ by $27x^2(5x + 7)$

Answer the following (4-mark questions):

1. There is a narrow rectangular plot,reserved for a school, in Mahulli village.The length and breadth of the plot are in the ratio 11: 4. At the rate of Rs 100 per meter it will cost Rs 75000 to fence the plot .What are the dimensions of the plot?
2. Find the least square number, which is exactly divisible by each of 3, 4, 5, 6 and 8.
3. Evaluate the product: $\left(a - \frac{1}{a}\right)\left(a + \frac{1}{a}\right)\left(a^2 + \frac{1}{a^2}\right)$ for $a = $ -2
4. Find the continued product of $(2x - 1)(2x + 1)(4x^2 + 1)(16x^4 + 1)$.
5. Use suitable identity to find the following product:
   (i) $(3x + 2)(3x + 5)$
   (ii) $(4a^2 + 1)(4a^2 + 3)$
   (iii) $(abc - 2)(abc - 1)$