إصدار
من سلسلة كتب المعاصر
غير مخصصة للبيع

EL-MOASSER

October Tests

From lesson (1) - uint (1) to lesson (2) - uint (2)



2nd Prep.
2027
FIRST TERM

Maths

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October Tests

Model 1

Total Mark 15

First group **Choose the correct answer from those given :**

(1) If $1 < \sqrt{n} < 2$, which of the following is a possible value for the number n? *(1 $\frac{1}{2}$ marks)*

A. 1 **B.** 2 **C.** 4 **D.** 8

(2) $\mathbb{R}_- \cap]-2 , 3] =$ ——— *(1 $\frac{1}{2}$ marks)*

A. $]-2 , 0[$ **B.** $]-2 , 0]$ **C.** $]-2 , 1]$ **D.** $]0 , 3]$

(3) The solution set of the equation $x^2 + 9 = 0$ in $\mathbb{R}$ is ——— *(1 $\frac{1}{2}$ marks)*

A. $\varnothing$ **B.** $\{3\}$ **C.** $\{-3\}$ **D.** $\{\pm 3\}$

Second group **Answer the following questions :**

(4) If $x = \frac{1}{\sqrt{3}+2}$, $y = \sqrt{3}+2$ *(2 $\frac{1}{2}$ marks)*

Find the value of : [1] xy [2] $x^2 + y^2$

(5) Put in the simplest form : $\frac{4^{n+2} \times 9^{n+3}}{6^{2n+3}}$ *(2 $\frac{1}{2}$ marks)*

(6) Factorize by taking out the greatest common factor : *(2 $\frac{1}{2}$ marks)*

$16a^6 - 4a^4 + 12a^2$

(7) Factorize completely : $x^2 - 4x - 45$ *(3 marks)*

Model 2

Total Mark 15

First group Choose the correct answer from those given :

(1) $[1 , 3] - \{1 , 3\} =$ ..... *(1 $\frac{1}{2}$ marks)*

A. $]1 , 3[$ **B.** $[1 , 3[$ **C.** $]-3 , -1[$ **D.** $]-1 , 3[$

(2) The solution set of the equation $a^2 = 3\ a$ in $\mathbb{R}$ is ..... *(1 $\frac{1}{2}$ marks)*

A. $\{3\}$ **B.** $\{3 , 0\}$ **C.** $\{0\}$ **D.** $\{0 , -3\}$

(3) The multiplicative inverse of the number $\frac{\sqrt{6}}{3}$ is ..... *(1 $\frac{1}{2}$ marks)*

A. $\frac{-\sqrt{6}}{3}$ **B.** $\frac{\sqrt{6}}{2}$ **C.** $\frac{-\sqrt{6}}{2}$ **D.** $\frac{2}{\sqrt{6}}$

Second group Answer the following questions :

(4) If $x = \frac{3}{\sqrt{5}-\sqrt{2}}$, $y = \sqrt{5}-\sqrt{2}$ Find in the simplest form : *(2 $\frac{1}{2}$ marks)*

1 $x + y$ 2 $x\ y$

(5) Put in the simplest form : $\frac{(\sqrt{3})^n \times (\sqrt{2})^{n+4}}{(\sqrt{6})^n}$ *(2 $\frac{1}{2}$ marks)*

(6) Factorize completely : $x^2 - 10\ x + 21$ *(2 $\frac{1}{2}$ marks)*

(7) If $3\ a + b = 8$, $2\ a + b = 6$ *(3 marks)*

Find the numerical value of the expression : $3\ a\ (2\ a + b) + b\ (2\ a + b)$

Model 3

First group Choose the correct answer from the given ones :

(1) What is the quarter of 4^{20} ? *(1 $\frac{1}{2}$ marks)*

A. 1^{10} **B.** 4^{19} **C.** 4^{16} **D.** 4^{5}

(2) If $x^2 - 11x + 28 = (x - a)(x - b)$, then $a + b =$ ..... *(1 $\frac{1}{2}$ marks)*

A. -16 **B.** -11 **C.** 11 **D.** 16

(3) Which of the following numbers is an irrational number that lies between 3 and 4 ? *(1 $\frac{1}{2}$ marks)*

A. 3.5 **B.** $\sqrt{7}$ **C.** $\sqrt[3]{8}$ **D.** $\sqrt{11}$

Second group Answer the following questions:

(4) Use the number line , find $X \cap Y$, where $X =]1 , 5]$, $Y = [3 , 6]$ *(2 $\frac{1}{2}$ marks)*

(5) If $3^x = 5$, find the value of : 3^{x-1} *(2 $\frac{1}{2}$ marks)*

(6) Find the solution set of the equation : $x^2 = 5x$ in $\mathbb{R}$ *(2 $\frac{1}{2}$ marks)*

(7) If $a = \sqrt{7} - \sqrt{5}$, $b = \frac{2}{a}$ Find in the simplest form : *(3 marks)*

1 a b 2 a – b

Answers of October Tests

Model 1

First group

(1) B (2) A (3) A

Second group

(4) 1 $x\,y = \frac{1}{\sqrt{3}+2} \times (\sqrt{3}+2) = 1$

2 $x = \frac{1}{\sqrt{3}+2} \times \frac{\sqrt{3}-2}{\sqrt{3}-2}$

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

$x^2 + y^2 = (-\sqrt{3}+2)^2 + (\sqrt{3}+2)^2$

$= 3 - 4\sqrt{3} + 4 + 3 + 4\sqrt{3} + 4 = 14$

(5) $\frac{(2\times 2)^{n+2} \times (3\times 3)^{n+3}}{(2\times 3)^{2n+3}}$

$= \frac{2^{n+2} \times 2^{n+2} \times 3^{n+3} \times 3^{n+3}}{2^{2n+3} \times 3^{2n+3}}$

$= 2^{n+2+n+2-2n-3} \times 3^{n+3+n+3-2n-3}$

$= 2 \times 3^3 = 54$

(6) $4a^2(4a^4 - a^2 + 3)$

(7) $(x+5)(x-9)$

Model 2

First group

(1) A (2) B (3) B

Second group

(4) $x = \frac{3}{\sqrt{5}-\sqrt{2}} \times \frac{\sqrt{5}+\sqrt{2}}{\sqrt{5}+\sqrt{2}}$

$= \frac{3(\sqrt{5}+\sqrt{2})}{3} = \sqrt{5}+\sqrt{2}$

1 $x + y = \sqrt{5}+\sqrt{2}+\sqrt{5}-\sqrt{2} = 2\sqrt{5}$

2 $x\,y = \frac{3}{\sqrt{5}-\sqrt{2}} \times (\sqrt{5}-\sqrt{2}) = 3$

(5) $\frac{(\sqrt{3})^n \times (\sqrt{2})^{n+4}}{(\sqrt{3})^n \times (\sqrt{2})^n} = (\sqrt{2})^{n+4-n} = (\sqrt{2})^4 = 4$

(6) $x^2 - 10x + 21 = (x-3)(x-7)$

(7) The expression $= (2a+b)(3a+b)$

$= 6 \times 8 = 48$

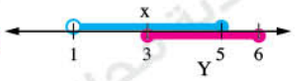
Model 3

First group

(1) B (2) C (3) D

Second group

(4)



$X \cap Y = [3, 5]$

(5) $3^{x-1} = \frac{3^x}{3} = \frac{5}{3}$

(6) $x^2 = 5x$

$x^2 - 5x = 0$

$x(x-5) = 0$

$x = 0$ or $x - 5 = 0$ $x = 5$

The solution set $= \{0, 5\}$

(7) $a = \sqrt{7}-\sqrt{5}$, $b = \frac{2}{a}$

$b = \frac{2}{\sqrt{7}-\sqrt{5}} \times \frac{\sqrt{7}+\sqrt{5}}{\sqrt{7}+\sqrt{5}} = \frac{2(\sqrt{7}+\sqrt{5})}{2}$

$= \sqrt{7}+\sqrt{5}$

1 $a\,b = (\sqrt{7}-\sqrt{5})(\sqrt{7}+\sqrt{5})$

$= 7 - 5 = 2$

2 $a - b = \sqrt{7}-\sqrt{5}-(\sqrt{7}+\sqrt{5})$

$= \sqrt{7}-\sqrt{5}-\sqrt{7}-\sqrt{5}$

$= -2\sqrt{5}$