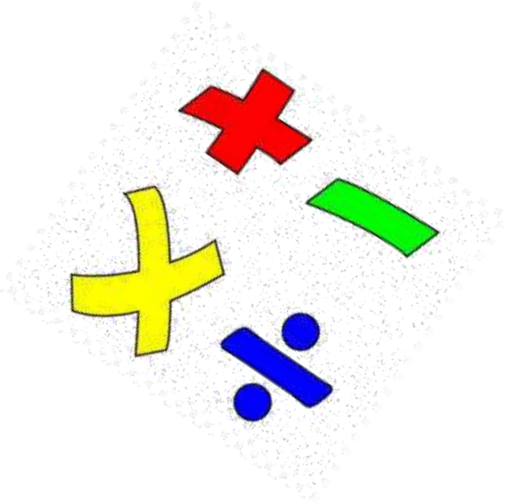
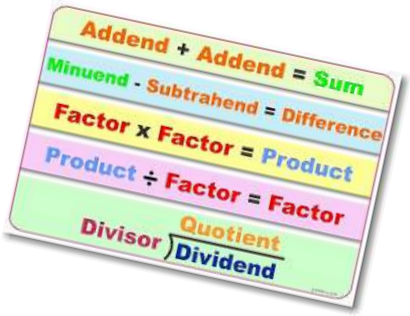
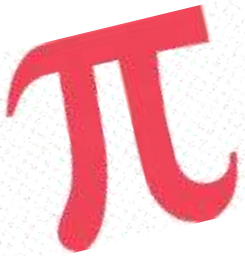




Math

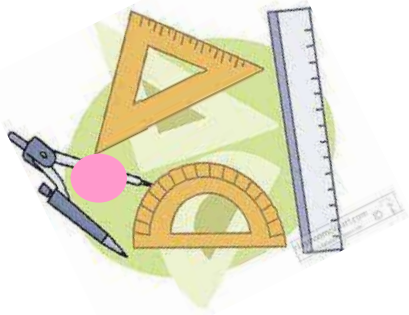
Prep 2 1st term



October Revision

Teacher

Eman Samir



Unit 1

Q1 Choose the correct answer:-

1) R= ……

a) Q` ∪ Q  b) Q ∩ Q` c) N ∪ Z d) Z ∪ Q`

2) Which of the following numbers is an irrational number ?

a) 0.3 b) $\sqrt{\frac{9}{25}}$ c) $\sqrt{5}$ d) $\sqrt[3]{-125}$

3) If X ∈ Z , X $<\sqrt{29}<$ X+1 ,what is the value of X ?

a) 4 b) 5 c) 6 d) 7

4) Estimating $\sqrt{41}$ to the closest integer is …….

a) 6 b) 7 c) 36 d) 49

5) Estimating $\sqrt[3]{25}$ to closest integer is …….

a) 2 b) 3 c) 5 d) 12.5

6) Which of the following numbers is an irrational number that lies between -1 and -2 ?

a) -3 b) $-1\frac{1}{2}$ c) $-\sqrt{3}$ d) $\sqrt{2}$

7) The side length of a squire with an area of 6 cm² is.....

a) a natural number b) an integer. c) a rational number. d) an irrational number.

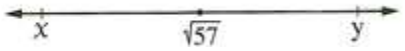
8) What is the solution set of the equation : $X^2 + 1 = 0$ in R ?

a) {-1} b) {1 , -1} c) {1} d) ø

9) If X is a negative real number, which of the following numbers is positive?

a) X^2 b) X^3 c) $2X$ d) $\frac{x}{2}$

10) If X and Y are two consecutive integers, what is the value of X+Y?



a) 11 b) 13 c) 15 d) 17

11) R= .....

a) $R^+ \cap R^-$ b) $R^+ \cup R^-$ c) $]-\infty, \infty[$ d) $Q \cap Q`$

12) R^+= .....

a) $]0, \infty[$ b) $]-\infty, 0[$ c) $[0, \infty[$ d) $]-\infty, 0]$

13) R^-= .....

a) $]0, \infty[$ b) $]-\infty, 0[$ c) $[0, \infty[$ d) $]-\infty, 0]$

14) The set of non-negative real numbers.....

a) $]0, \infty[$ b) $]-\infty, 0[$ c) $[0, \infty[$ d) $]-\infty, 0]$

15) The set of non-positive real numbers is.....

a) $]0, \infty[$ b) $]-\infty, 0[$ c) $[0, \infty[$ d) $]-\infty, 0]$

16) $|-4|$ .....$[3, \infty[$

a) $\in$ b) $\notin$ c) $\subset$ d) $\not\subset$

17) If $a \in \ ]2,5[$, which of the following can be the value of a?

a) 1 b) 2 c) 4 d) 5

18) If $a \notin \ ]-1,3]$, which of the following can be the value of a?

a) -1 b) 0 c) 2 d) 3

19) $\sqrt[3]{-125}$…….$]-\sqrt{25},\sqrt{25}]$

a) $\in$ b) $\notin$ c) $\subset$ d) $\not\subset$

20) Z^+ ……. $]0,\infty[$

a) $\in$ b) $\notin$ c) $\subset$ d) $\not\subset$

21) $[-3,6]$ - $]6,8[$=……

a) $\emptyset$ b) $[-3,6]$ c) $[-3,6[$ d) $]-3,6[$

22) $[-4,1\ ] \cap [\ 0,1\ ]$= …….

a) $\{1\}$ b) $]-4,1]$ c) $[0,1]$ d) $[\ 0,1[$

23) $]-\infty,2[\ \cap\ [0,\infty\ [$ =…….

a) $[\ 0,2]$ b) $[0,2[$ c) R d) $\emptyset$

24) What is the interval resulting from $]2,5[\ \cup \{2\}$?

a) $]\ 2,5\ [$ b) $[2,5]$ c) $]2,5]$ d) $[\ 2,5[$

25) Which of following interval does $-\sqrt{7}$ belong to?

a) $[-2,-1]$ b) $[-3,-2\ ]$ c) $[-4,-3]$ d) $[-7,-6]$

26) $R - R^{-} = \ldots\ldots$

a) R^{+} b) $]-\infty, 0]$ c) $[0, \infty[$ d) $]-\infty, 0[$

27) What is the sum of all real number in the interval $[-75, 75]$?

a) -75 b) 75 c) 150 d) 0

28) What is the sum of all real number in the interval $[-75, 75[$?

a) -75 b) 75 c) 150 d) 0

29) $\{3\} \cap [3.6] = \ldots\ldots$

a) $\emptyset$ b) $\{3\}$ c) $[3, 6]$ d) $\{6\}$

30) $\{8, 9, 10\} -]8, 10[= \ldots\ldots$

a) $\emptyset$ b) $\{8, 10\}$ c) $\{9\}$ d) N

31) If $X \in [-3, 4]$, then $X^2 \in \ldots\ldots$

a) $[9, 16]$ b) $[0, 9]$ c) $[0, 16]$ d) $[-9, 0]$

32) If $a + \sqrt{5} = 0$, what is the value of a ?

a) 0 b) $\sqrt{5}$ c) $-\sqrt{5}$ d) $\frac{1}{\sqrt{5}}$

33) If $a \times \sqrt{2} = 1$, what is the value of a ?

a) 1 b) $\sqrt{2}$ c) $-\sqrt{2}$ d) $\frac{\sqrt{2}}{2}$

34) If a $\sqrt{5} - 4\sqrt{5} = 3\sqrt{5}$, then $\ldots\ldots$

a) $a = -1$ b) $a = 1$ c) $a = 7$ d) $a = 10$

35) If $(2\sqrt{3})^n = 12$, then $\ldots\ldots$

a) $n = 2$ b) $n = 3$ c) $n = 4$ d) $n = 6$

36) If $x = \sqrt{2} + 10$, $y = \sqrt{2} - 10$, what is the value of $(x + y)^2$?

a) 4 b) 6 c) 8 d) $4\sqrt{2}$

37) If $\sqrt[3]{5} + 3a = 4\sqrt[3]{5}$, then …….

a) $a = 1$ b) $a = \sqrt{5}$ c) $a = \sqrt[3]{5}$ d) $a = 5$

38) What is the additive inverse of the number $\frac{7}{\sqrt{7}}$ in its simplest form?

a) $\frac{\sqrt{7}}{7}$ b) 7 c) $-\sqrt{7}$ d) -7

39) What is the multiplicative inverse of the number $\sqrt{5}$ in its simplest form?

a) -5 b) $\frac{-1}{5}$ c) $\frac{5}{\sqrt{5}}$ d) $\frac{\sqrt{5}}{5}$

40) What is the multiplicative inverse of the number $\sqrt{3} - 2$?

a) $2 - \sqrt{3}$ b) $\sqrt{3} + 2$ c) $-\sqrt{3} - 2$ d) $\sqrt{3} - 2$

41) If $\frac{x}{3\sqrt{2}} = \frac{y}{2\sqrt{5}} = 1$, then $x^2 + y^2$ = …….

a) 36 b) 38 c) 42 d) 45

42) What is the value of: $\sqrt{18} + \sqrt{32}$?

a) $\sqrt{50}$ b) $7\sqrt{2}$ c) $7\sqrt{4}$ d) $5\sqrt{4}$

43) What is the multiplicative inverse of the number $\sqrt{50}$?

a) $\frac{\sqrt{2}}{10}$ b) $\frac{-\sqrt{2}}{10}$ c) $-5\sqrt{2}$ d) $5\sqrt{2}$

44) If $a\sqrt[3]{2} = \sqrt[3]{3} \times \sqrt[3]{10}$, what is the value of a ?

a) 30 b) $\sqrt[3]{30}$ c) 15 d) $\sqrt[3]{15}$

45) If $2\sqrt{3} \times 4a = 8\sqrt{6}$, what is the value of a ?

a) $\sqrt{2}$ b) $\sqrt{3}$ c) 2 d) $\sqrt{6}$

46) If $\frac{\sqrt{3}}{\sqrt{a}} = \frac{\sqrt{2}}{\sqrt{6}}$, what is the value of a ?

a) $\sqrt{3}$ b) $\sqrt{6}$ c) 3 d) 9

47) If $x + \sqrt{28} = \sqrt{7}$, what is the value of x ?

a) $\sqrt{21}$ b) $-\sqrt{21}$ c) $\sqrt{7}$ d) $-\sqrt{7}$

48) If $x = \frac{\sqrt{6}}{\sqrt{2}}$, what is the value of $\frac{1}{x}$?

a) $\sqrt{3}$ b) $\frac{\sqrt{3}}{2}$ c) $\frac{\sqrt{3}}{3}$ d) $2\sqrt{3}$

49) What is the next number in this pattern? $\sqrt{5}, \sqrt{20}, \sqrt{45}, \sqrt{80}, \ldots\ldots\ldots\ldots$

a) $2\sqrt{5}$ b) $\sqrt{100}$ c) $\sqrt{120}$ d) $5\sqrt{5}$

50) $\sqrt[3]{3} \times \sqrt[3]{9} = \sqrt{\ldots\ldots\ldots\ldots\ldots}$

a) 27 b) 3 c) 9 d) 18

51) What is the result of $5^2 + 5^2$?

a) 10^2 b) 10^4 c) 5^4 d) 50

52) What is the result of $3^5 \times 2^5$?

a) 5^{10} b) 6^{10} c) 6^5 d) 6^{25}

53) What is the value of $3x^0$? where $x \neq 0$

a) 0 b) 1 c) 3 d) $3x$

54) What is the result of $\frac{(ab)^3}{b^3}$?

a) a^3 b) $\frac{a}{b}$ c) $\frac{a^3}{b^2}$ d) $\frac{a^2}{b^3}$

55) What is the quarter of the number 4^{20} ?

a) 1^{10} b) 4^{19} c) 4^{16} d) 4^5

56) What is four times the number 2^8 ?

a) 2^{32} b) 8^8 c) 2^{10} d) 4^8

57) What is the sixth of the number $2^{12} \times 3^{12}$?

a) 6^2 b) 6^4 c) 6^{11} d) 6^{23}

58) $x^{m-1} \times \ldots\ldots = 1\,, x \neq 0$

a) x^{m-1} b) x^{-m-1} c) x^{m+1} d) x^{-m+1}

59) What is the perimeter of a square with an area of a cm^2 ?

a) $a^4\ cm$ b) $(\sqrt{a})^4\ cm$ c) $4\sqrt{a}\ cm$ d) $4\ a\ cm$

60) What is the value of $4^2 + 4^2 + 4^2 + 4^2$?

a) 4^2 b) 4^3 c) 4^8 d) 4^{16}

61) If $2^{x-1} = 1$, what is the value of x ?

a) 0 b) 1 c) -1 d) -2

62) If $\sqrt{6} \times (\sqrt{6})^x = 1$, what is the value of x ?

a) 0 b) 1 c) -1 d) -2

63) What is the $\frac{1}{5}$ of the number $(\sqrt[3]{5})^6$?

a) 5 b) 25 c) $\sqrt[3]{5}$ d) $(\sqrt[3]{5})^8$

64) If $2^x = 3$, what is the value of 2^{x+1} ?

a) 4 b) 5 c) 6 d) 9

65) What is the value of: $\frac{2^{2n+1} \times 5^{2n+1}}{(10)^{2n}}$?

a) $\frac{1}{10}$ b) 7 c) 10 d) 100

66) What is the value of $3^x + 3^x + 3^x$?

a) 3^{3x} b) 3^{x+1} c) 9^x d) 9^{3x}

67) What is the value of $(\sqrt{2})^{10} + 2^5$?

a) 2^6 b) 2^{10} c) 2^{15} d) 2^{50}

68) What is the quarter of 2^{14} ?

a) 2^{12} b) 2^8 c) 2^{10} d) 4^8

69) If $x = \frac{\sqrt{9}}{\sqrt{3}}$, what is the value of x^{-1} ?

a) $\frac{\sqrt{3}}{3}$ b) $\frac{\sqrt{9}}{\sqrt{2}}$ c) $\sqrt{3}$ d) 2

Q2 Complete the following :-

1) $\mathbb{R} \cap [2,5[= \ldots\ldots\ldots\ldots$

2) $\mathbb{R}^- \cup \mathbb{R}^+ = \ldots\ldots\ldots\ldots$

Q3 Answer the following :-

1) The solution set in $\mathbb{Q}$ of the equation $X^2 - 5 = 2$

2) The solution set in $\mathbb{Q}'$ of the equation $X^3 - 11 = 28$

3) Using the number line represent the two intervals $X = [3,4]$, $Y =]1,3]$ then find $X \cup Y$

4) Using the number line represent the two intervals $X = [3,6]$, $Y =]1,3]$ then find $X \cap Y$

5) If $A = [-1, 3]$, $B =]-\infty, 3[$, find :

- $A \cup B$
- $A \cap B$
- $A - B$
- $B - A$

6) Find in the simplest form :-

a) $(\sqrt{8} - 3)(\sqrt{8} + 3)$

b) $(\sqrt{5} - 1)^2 + (\sqrt{5} - 2)(\sqrt{5} + 2)$

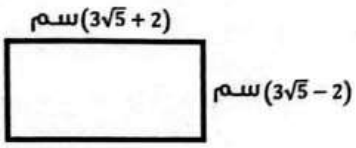
c) $(\sqrt{3} - 2)^2$

7) Make the denominator an integer

a) $\frac{10}{2\sqrt{5}}$

b) $\frac{10}{5-\sqrt{15}}$

9) Find the area of the opposite rectangle .



10) Find the result in the simplest form :

a) $\sqrt[3]{3} + \sqrt[3]{3}$ = ...

b) $2\sqrt{3} + 5\sqrt{27} - 4\sqrt{48}$ = ...

c) $\sqrt[3]{24} + \sqrt[3]{3} - 2\sqrt[3]{81}$ = ...

d) $2\sqrt[3]{\frac{1}{4}} + \sqrt[3]{16}$ = ...

e) $\frac{(\sqrt{3})^6 \times (\sqrt{3})^4}{(\sqrt{3})^5 \times (\sqrt{3})^3}$ = ...

f) $\frac{(-2xy)^{-3}}{x^{-4} \times y^{-3}}$ = ...

11) If X = ($\sqrt{5}$ - 2) , Y = ($\sqrt{5}$ + 2) , find

a) X Y

b) X + Y

13) If the area of a square is $144\ cm^2$, find its diagonal.

Unit 2

Q1 Choose the correct answer:-

1) what is the greatest common factor between the terms of the polynomial $12x^2 - 8x$

a) 2 b) 4 c) $2x$ d) $4x$

2) $49\,ab + 14\,b^2 = 7b(\ldots\ldots + \ldots\ldots)$

a) $7b + 2a$ b) $7a + 2b$ c) $42a + 7b$ d) $14\,a\,b$

3) $-9x^2 - 18y^2 = -9(\ldots\ldots + \ldots\ldots)$

a) $x^2 + 2y^2$ b) $x^2 - 2y^2$ c) $2x^2 + y^2$ d) $x^2 - 9y^2$

4) $33\,m^2n + 44\,m\,n^2 = \ldots\ldots\ldots\ldots(3\,m + 4\,n)$

a) $11m^2n^2$ b) $11\,m + n$ c) $11\,n\,m^2$ d) $11\,m\,n$

6) $6\,a - 8\,b = \ldots\ldots\ldots$

a) $6(a - 2b)$ b) $4(2a - 4b)$
c) $2(3a - 4b)$ d) $14(a - b)$

8) $x(a + b) + y(a + b) = \ldots\ldots\ldots\ldots$

a) $(x - y)(a - b)$ b) $(x + y)(a + b)$
c) $(x - y)(a + b)$ d) $(x + y)(a - b)$

9) If $x + 2y = 7$, then what is the value of $2x + 4y$?

a) 14 b) 28 c) 18 d) 56

11) If $3x + 3y = 18$, then what is the value of $x + y$?

a) 54 b) 15 c) 6 d) 2

Q2 Answewr the following :-

1) Factorize by taking out the greatest common factor :

a) $4X - 12X^3 + 16X^3$

2) Find the solution set of each of the following in $\mathbb{R}$;-

a) $10\ Y^2 - 30\ Y = 0$

Answers

Unit 1

Q1 Choose the correct answer:-

1) R= ……

a) Q` ∪ Q  b) Q ∩ Q` c) N ∪ Z d) Z ∪ Q`

2) Which of the following numbers is an irrational number ?

a) 0.3 b) $\sqrt{\frac{9}{25}}$ c) $\sqrt{5}$ d) $\sqrt[3]{-125}$

3) If X ∈ Z , X $<\sqrt{29}<$ X+1,what is the value of X ?

a) 4 b) 5 c) 6 d) 7

4) Estimating $\sqrt{41}$ to the closest integer is …….

a) 6 b) 7 c) 36 d) 49

5) Estimating $\sqrt[3]{25}$ to closest integer is …….

a) 2 b) 3 c) 5 d) 12.5

6) Which of the following numbers is an irrational number that lies between -1 and -2 ?

a) -3 b) $-1\frac{1}{2}$ c) $-\sqrt{3}$ d) $\sqrt{2}$

7) The side length of a squire with an area of 6 cm² is.....

a) a natural number b) an integer. c) a rational number. d) an irrational number.

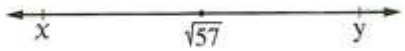
8) What is the solution set of the equation : $X^2 + 1 = 0$ in R ?

a) {-1} b) {1,-1} c) {1} d) ∅

9) If X is a negative real number, which of the following numbers is positive?

a) X^2 b) X^3 c) 2X d) $\frac{x}{2}$

10) If X and Y are two consecutive integers, what is the value of X+Y?



a) 11 b) 13 c) 15 d) 17

11) R= .....

a) $R^+ \cap R^-$ b) $R^+ \cup R^-$ c) $]-\infty, \infty[$ d) $Q \cap Q`$

12) R^+= .....

a) $]0, \infty[$ b) $]-\infty, 0[$ c) $[0, \infty[$ d) $]-\infty, 0]$

13) R^-= .....

a) $]0, \infty[$ b) $]-\infty, 0[$ c) $[0, \infty[$ d) $]-\infty, 0]$

14) The set of non-negative real numbers…….

a) $]0, \infty[$ b) $]-\infty, 0[$ c) $[0, \infty[$ d) $]-\infty, 0]$

15) The set of non-positive real numbers is…….

a) $]0, \infty[$ b) $]-\infty, 0[$ c) $[0, \infty[$ d) $]-\infty, 0]$

16) $|-4|$ ……$[3, \infty[$

a) $\in$ b) $\notin$ c) $\subset$ d) $\not\subset$

17) If $a \in \ ]2,5[$, which of the following can be the value of a?

a) 1 b) 2 c) 4 d) 5

18) If $a \notin \ ]-1,3]$, which of the following can be the value of a?

a) -1 b) 0 c) 2 d) 3

19) $\sqrt[3]{-125}$…….$]-\sqrt{25},\sqrt{25}]$

a) $\in$ b) $\notin$ c) $\subset$ d) $\not\subset$

20) Z^+ ……. $]0,\infty[$

a) $\in$ b) $\notin$ c) $\subset$ d) $\not\subset$

21) $[-3,6]$ - $]6,8[$=…….

a) $\emptyset$ b) $[-3,6]$ c) $[-3,6[$ d) $]-3,6[$

22) $[-4,1\ ] \cap [\ 0,1\ ]$= …….

a) $\{1\}$ b) $]-4,1]$ c) $[0,1]$ d) $[\ 0,1[$

23) $]-\infty,2[\ \cap\ [0,\infty\ [$ =…….

a) $[\ 0,2]$ b) $[0,2[$ c) R d) $\emptyset$

24) What is the interval resulting from $]2,5[\ \cup\ \{2\}$?

a) $]\ 2,5\ [$ b) $[2,5]$ c) $]2,5]$ d) $[\ 2,5[$

25) Which of following interval does $-\sqrt{7}$ belong to?

a) $[-2,-1]$ b) $[-3,-2\ ]$ c) $[-4,-3]$ d) $[-7,-6]$

For more steps watch

26) $R - R^{-} = \ldots\ldots$

a) R^{+} b) $]-\infty, 0]$ c) $[0, \infty[$ d) $]-\infty, 0[$

27) What is the sum of all real number in the interval $[-75, 75]$?

a) -75 b) 75 c) 150 d) 0

28) What is the sum of all real number in the interval $[-75, 75[$?

a) -75 b) 75 c) 150 d) 0

29) $\{3\} \cap [3.6] = \ldots\ldots$

a) $\emptyset$ b) $\{3\}$ c) $[3, 6]$ d) $\{6\}$

30) $\{8, 9, 10\} -]8, 10[= \ldots\ldots$

a) $\emptyset$ b) $\{8, 10\}$ c) $\{9\}$ d) N

31) If $X \in [-3, 4]$, then $X^2 \in \ldots\ldots$

a) $[9, 16]$ b) $[0, 9]$ c) $[0, 16]$ d) $[-9, 0]$

32) If $a + \sqrt{5} = 0$, what is the value of a ?

a) 0 b) $\sqrt{5}$ c) $-\sqrt{5}$ d) $\frac{1}{\sqrt{5}}$

33) If $a \times \sqrt{2} = 1$, what is the value of a ?

a) 1 b) $\sqrt{2}$ c) $-\sqrt{2}$ d) $\frac{\sqrt{2}}{2}$

34) If a $\sqrt{5} - 4\sqrt{5} = 3\sqrt{5}$, then $\ldots\ldots$

a) $a = -1$ b) $a = 1$ c) $a = 7$ d) $a = 10$

35) If $(2\sqrt{3})^n = 12$, then $\ldots\ldots$

a) $n = 2$ b) $n = 3$ c) $n = 4$ d) $n = 6$

36) If $x = \sqrt{2} + 10$, $y = \sqrt{2} - 10$, what is the value of $(x + y)^2$?

a) 4 b) 6 c) 8 d) $4\sqrt{2}$

37) If $\sqrt[3]{5} + 3a = 4\sqrt[3]{5}$, then …….

a) $a = 1$ b) $a = \sqrt{5}$ c) $a = \sqrt[3]{5}$ d) $a = 5$

38) What is the additive inverse of the number $\frac{7}{\sqrt{7}}$ in its simplest form?

a) $\frac{\sqrt{7}}{7}$ b) 7 c) $-\sqrt{7}$ d) -7

39) What is the multiplicative inverse of the number $\sqrt{5}$ in its simplest form?

a) -5 b) $\frac{-1}{5}$ c) $\frac{5}{\sqrt{5}}$ d) $\frac{\sqrt{5}}{5}$

40) What is the multiplicative inverse of the number $\sqrt{3} - 2$?

a) $2 - \sqrt{3}$ b) $\sqrt{3} + 2$ c) $-\sqrt{3} - 2$ d) $\sqrt{3} - 2$

41) If $\frac{x}{3\sqrt{2}} = \frac{y}{2\sqrt{5}} = 1$, then $x^2 + y^2$ = …….

a) 36 b) 38 c) 42 d) 45

For more steps watch

42) What is the value of: $\sqrt{18} + \sqrt{32}$?

a) $\sqrt{50}$ b) $7\sqrt{2}$ c) $7\sqrt{4}$ d) $5\sqrt{4}$

43) What is the multiplicative inverse of the number $\sqrt{50}$?

a) $\frac{\sqrt{2}}{10}$ b) $\frac{-\sqrt{2}}{10}$ c) $-5\sqrt{2}$ d) $5\sqrt{2}$

44) If $a\sqrt[3]{2} = \sqrt[3]{3} \times \sqrt[3]{10}$, what is the value of a ?

a) 30 b) $\sqrt[3]{30}$ c) 15 d) $\sqrt[3]{15}$

45) If $2\sqrt{3} \times 4a = 8\sqrt{6}$, what is the value of a ?

a) $\sqrt{2}$ b) $\sqrt{3}$ c) 2 d) $\sqrt{6}$

46) If $\frac{\sqrt{3}}{\sqrt{a}} = \frac{\sqrt{2}}{\sqrt{6}}$, what is the value of a ?

a) $\sqrt{3}$ b) $\sqrt{6}$ c) 3 d) 9

47) If $x + \sqrt{28} = \sqrt{7}$, what is the value of x ?

a) $\sqrt{21}$ b) $-\sqrt{21}$ c) $\sqrt{7}$ d) $-\sqrt{7}$

48) If $x = \frac{\sqrt{6}}{\sqrt{2}}$, what is the value of $\frac{1}{x}$?

a) $\sqrt{3}$ b) $\frac{\sqrt{3}}{2}$ c) $\frac{\sqrt{3}}{3}$ d) $2\sqrt{3}$

49) What is the next number in this pattern? $\sqrt{5}, \sqrt{20}, \sqrt{45}, \sqrt{80}, \ldots\ldots\ldots\ldots$

a) $2\sqrt{5}$ b) $\sqrt{100}$ c) $\sqrt{120}$ d) $5\sqrt{5}$

50) $\sqrt[3]{3} \times \sqrt[3]{9} = \sqrt{\ldots\ldots\ldots\ldots}$

a) 27 b) 3 c) 9 d) 18

51) What is the result of $5^2 + 5^2$?

a) 10^2 b) 10^4 c) 5^4 d) 50

52) What is the result of $3^5 \times 2^5$?

a) 5^{10} b) 6^{10} c) 6^5 d) 6^{25}

53) What is the value of $3x^0$? where $x \neq 0$

a) 0 b) 1 c) 3 d) $3x$

54) What is the result of $\frac{(ab)^3}{b^3}$?

a) a^3 b) $\frac{a}{b}$ c) $\frac{a^3}{b^2}$ d) $\frac{a^2}{b^3}$

55) What is the quarter of the number 4^{20} ?

a) 1^{10} b) 4^{19} c) 4^{16} d) 4^5

56) What is four times the number 2^8 ?

a) 2^{32} b) 8^8 c) 2^{10} d) 4^8

57) What is the sixth of the number $2^{12} \times 3^{12}$?

a) 6^2 b) 6^4 c) 6^{11} d) 6^{23}

58) $x^{m-1} \times \ldots\ldots = 1\,, x \neq 0$

a) x^{m-1} b) x^{-m-1} c) x^{m+1} d) x^{-m+1}

59) What is the perimeter of a square with an area of a cm^2 ?

a) $a^4\ cm$ b) $(\sqrt{a})^4\ cm$ c) $4\sqrt{a}\ cm$ d) $4\ a\ cm$

60) What is the value of $4^2 + 4^2 + 4^2 + 4^2$?

a) 4^2 b) 4^3 c) 4^8 d) 4^{16}

61) If $2^{x-1} = 1$, what is the value of x ?

a) 0 b) 1 c) -1 d) -2

62) If $\sqrt{6} \times (\sqrt{6})^x = 1$, what is the value of x ?

a) 0 b) 1 c) -1 d) -2

63) What is the $\frac{1}{5}$ of the number $(\sqrt[3]{5})^6$?

a) 5 b) 25 c) $\sqrt[3]{5}$ d) $(\sqrt[3]{5})^8$

64) If $2^x = 3$, what is the value of 2^{x+1} ?

a) 4 b) 5 c) 6 d) 9

65) What is the value of: $\frac{2^{2n+1} \times 5^{2n+1}}{(10)^{2n}}$?

a) $\frac{1}{10}$ b) 7 c) 10 d) 100

66) What is the value of $3^x + 3^x + 3^x$?

a) 3^{3x} b) 3^{x+1} c) 9^x d) 9^{3x}

67) What is the value of $(\sqrt{2})^{10} + 2^5$?

a) 2^6 b) 2^{10} c) 2^{15} d) 2^{50}

68) What is the quarter of 2^{14} ?

a) 2^{12} b) 2^8 c) 2^{10} d) 4^8

69) If $x = \frac{\sqrt{9}}{\sqrt{3}}$, what is the value of x^{-1} ?

a) $\frac{\sqrt{3}}{3}$ b) $\frac{\sqrt{9}}{\sqrt{2}}$ c) $\sqrt{3}$ d) 2

Q2 Complete the following :-

For more steps watch

1) $\mathbb{R} \cap [2,5[= [2,5[=$

2) $\mathbb{R}^- \cup \mathbb{R}^+ = \mathbb{R} - \{0\}$

Q3 Answer the following :-

1) The solution set in $\mathbb{Q}$ of the equation $X^2 - 5 = 2$

$X^2 - 5 = 2$

$X^2 = 2 + 5 = 7$

$X = \pm\sqrt{7}$ S.S = $\emptyset$

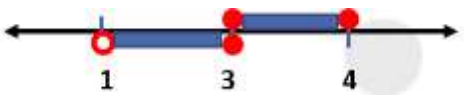
2) The solution set in $\mathbb{Q}'$ of the equation $X^3 - 11 = 28$

$X^3 - 11 = 28$

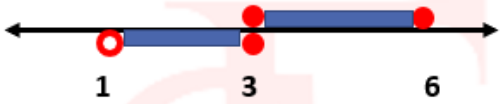
$X^3 = 28 + 11 = 39$

$X = \sqrt[3]{39}$ S.S = $\{\sqrt[3]{39}\}$

3) Using the number line represent the two intervals $X = [3,4]$, $Y =]1,3]$ then find $X \cup Y =]1,4]$



4) Using the number line represent the two intervals $X = [3,6]$, $Y =]1,3]$ then find $X \cap Y = \{3\}$



5) If $A = [-1,3]$, $B =]-\infty,3[$, find :

- $A \cup B =]-\infty,3]$
- $A \cap B = [-1,3[$
- $A - B = \{3\}$
- $B - A =]-\infty,-1[$

For more steps watch

6) Find in the simplest form :-

a) $(\sqrt{8} - 3)(\sqrt{8} + 3) = -1$

b) $(\sqrt{5} - 1)^2 + (\sqrt{5} - 2)(\sqrt{5} + 2) = 7-2\sqrt{5}$

c) $(\sqrt{3} - 2)^2 = 7-4\sqrt{3}$

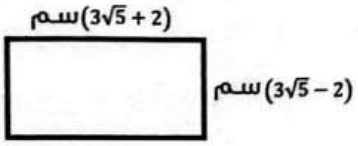
7) Make the denominator an integer

a) $\frac{10}{2\sqrt{5}} = \sqrt{5}$

b) $\frac{10}{5-\sqrt{15}} = 5 + \sqrt{15}$

9) Find the area of the opposite rectangle .

$(3\sqrt{5}+2)(3\sqrt{5}-2) = 41\text{cm}^2$



10) Find the result in the simplest form :

For more steps watch

a) $\sqrt[3]{3} + \sqrt[3]{3} = 2\sqrt[3]{3}$

b) $2\sqrt{3} + 5\sqrt{27} - 4\sqrt{48} = \sqrt{3}$

c) $\sqrt[3]{24} + \sqrt[3]{3} - 2\sqrt[3]{81} = -3\sqrt[3]{3}$

d) $2\sqrt[3]{\frac{1}{4}} + \sqrt[3]{16} = 3\sqrt[3]{2}$

e) $\frac{(\sqrt{3})^6 \times (\sqrt{3})^4}{(\sqrt{3})^5 \times (\sqrt{3})^3} = 3$

f) $\frac{(-2xy)^{-3}}{x^{-4} \times y^{-3}} = \frac{-x}{8}$

11) If X = ($\sqrt{5}$ - 2) , Y = ($\sqrt{5}$ + 2) , find

a) X Y = ($\sqrt{5}$ - 2) ($\sqrt{5}$ + 2) = 1

b) X + Y = ($\sqrt{5}$ - 2) + ($\sqrt{5}$ + 2) = $2\sqrt{5}$

12) If the area of a square is $144\ cm^2$, find its diagonal.

Diagonal = $\sqrt{2}$ cm

Unit 2

Q1 Choose the correct answer:-

1) what is the greatest common factor between the terms of the polynomial $12x^2 - 8x$

a) 2 b) 4 c) $2x$ d) $4x$

2) $49\,ab + 14\,b^2 = 7b(\ldots\ldots + \ldots\ldots)$

a) $7b + 2a$ b) $7a + 2b$ c) $42a + 7b$ d) $14\,a\,b$

3) $-9x^2 - 18y^2 = -9(\ldots\ldots + \ldots\ldots)$

a) $x^2 + 2y^2$ b) $x^2 - 2y^2$ c) $2x^2 + y^2$ d) $x^2 - 9y^2$

4) $33\,m^2n + 44\,m\,n^2 = \ldots\ldots\ldots\ldots(3\,m + 4\,n)$

a) $11m^2n^2$ b) $11\,m + n$ c) $11\,n\,m^2$ d) $11\,m\,n$

6) $6\,a - 8\,b = \ldots\ldots\ldots$

a) $6(a - 2b)$ b) $4(2a - 4b)$
c) $2(3a - 4b)$ d) $14(a - b)$

8) $x(a + b) + y(a + b) = \ldots\ldots\ldots\ldots$

a) $(x - y)(a - b)$ b) $(x + y)(a + b)$
c) $(x - y)(a + b)$ d) $(x + y)(a - b)$

9) If $x + 2y = 7$, then what is the value of $2x + 4y$?

a) 14 b) 28 c) 18 d) 56

11) If $3x + 3y = 18$, then what is the value of $x + y$?

a) 54 b) 15 c) 6 d) 2

Q2 Answewr the following :-

1) Factorize by taking out the greatest common factor :

a) $4X - 12X^3 + 16X^3$

. $4X(1 - 3X^2 + 4X^2)$

2) Find the solution set of each of the following in $\mathbb{R}$;-

a) $10\ Y^2 - 30\ Y = 0$

. $10\,Y(\,Y - 3\,) = 0$

. $10\,Y = 0\ ,\ Y = 0$

. $OR\ \ (\,Y - 3\,) = 0\ \ ,\ Y = 3$

. $S.S = \{0, 3\}$

Model Exam

Q1 Choose the correct answer:-

1) If $x = \frac{\sqrt{6}}{\sqrt{2}}$, what is the value of $\frac{1}{x}$?

a) $\sqrt{3}$ b) $\frac{\sqrt{3}}{2}$ c) $\frac{\sqrt{3}}{3}$ d) $2\sqrt{3}$

2) The interval which represent $]1,2[\cup \{1,2\}$ is .....

a) $[1,2]$ b) $]1,2[$ c) $]1,2]$ d) $[1,2[$

3) If $\frac{x}{3\sqrt{2}} = \frac{y}{2\sqrt{5}} = 1$, then $x^2 + y^2$ = ...

a) 36 b) 38 c) 42 d) 45

4) If $a\sqrt{3} - 3\sqrt{3} = 5\sqrt{3}$

a) 7 b) 8 c) 9 d) 10

5) $\sqrt[3]{2} + \sqrt[3]{2}$ = ...

a) $\sqrt[3]{2}$ b) $\sqrt[3]{4}$ c) $\sqrt[3]{8}$ d) $\sqrt[3]{16}$

6) $(\sqrt{5} + \sqrt{2})(\sqrt{5} - \sqrt{2})$ = ...

a) 2 b) 3 c) 6 d) 7

7) What is the multiplicative inverse of the number $\sqrt{3} - 2$?

a) $2 - \sqrt{3}$ b) $\sqrt{3} + 2$ c) $-\sqrt{3} - 2$ d) $\sqrt{3} - 2$

8) If $(X + 2)^0 = 1$, then X $\in$ .....

a) $\mathbb{R}$ b) $\mathbb{R} - \{-2\}$ c) $\mathbb{R} - \{2\}$ d) $\{-2\}$

9) If $x = \sqrt{2} + 10$, $y = \sqrt{2} - 10$, what is the value of $(x + y)^2$?

a) 4 b) 8 c) 6 d) $4\sqrt{2}$

Q2 Answer the following :-

1) If X = ($\sqrt{2}$ - 2) , Y = ($\sqrt{2}$ + 2) , find in the simplest form ;

a) XY b) X + Y

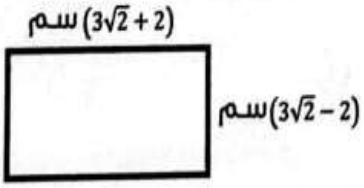
2) Find in the simplest form $\sqrt[3]{128} + \sqrt[3]{16} - 2\sqrt[3]{54}$

3) Find in the simplest form .

a) $(\sqrt{7} - 2)^2 + (\sqrt{7} + 3)(\sqrt{7} - 1)$ b) $\frac{(\sqrt{5})^n \times (\sqrt{3})^{2-n}}{3 \times (\sqrt{15})^{-n}}$

4) Make the denominator in the number $\frac{12}{\sqrt{3}}$ an integer

5) Find the area of the opposite rectangle .



6) Using the number line represent the two intervals $X = [5, 7]$, $Y =]4, 5]$

then find

$X \cup Y$, $X \cap Y$, $X - Y$, $Y - X$

7) Find in $\mathbb{R}$ the solution set of the equation $2X^2 - 3 = 15$

Answers

Model Exam

Q1 Choose the correct answer:-

1) If $x = \frac{\sqrt{6}}{\sqrt{2}}$, what is the value of $\frac{1}{x}$?

a) $\sqrt{3}$ b) $\frac{\sqrt{3}}{2}$ c) $\frac{\sqrt{3}}{3}$ d) $2\sqrt{3}$

2) The interval which represent $]1,2[\cup \{1,2\}$ is .....

a) $[1,2]$ b) $]1,2[$ c) $]1,2]$ d) $[1,2[$

3) If $\frac{x}{3\sqrt{2}} = \frac{y}{2\sqrt{5}} = 1$, then $x^2 + y^2$ = ...

a) 36 b) 38 c) 42 d) 45

4) If $a\sqrt{3} - 3\sqrt{3} = 5\sqrt{3}$

a) 7 b) 8 c) 9 d) 10

5) $\sqrt[3]{2} + \sqrt[3]{2}$ = ...

a) $\sqrt[3]{2}$ b) $\sqrt[3]{4}$ c) $\sqrt[3]{8}$ d) $\sqrt[3]{16}$

6) $(\sqrt{5} + \sqrt{2})(\sqrt{5} - \sqrt{2})$ = ...

a) 2 b) 3 c) 6 d) 7

7) What is the multiplicative inverse of the number $\sqrt{3} - 2$?

a) $2 - \sqrt{3}$ b) $\sqrt{3} + 2$ c) $-\sqrt{3} - 2$ d) $\sqrt{3} - 2$

8) If $(X + 2)^0 = 1$, then X $\in$ .....

a) $\mathbb{R}$ b) $\mathbb{R} - \{-2\}$ c) $\mathbb{R} - \{2\}$ d) $\{-2\}$

9) If $x = \sqrt{2} + 10$, $y = \sqrt{2} - 10$, what is the value of $(x + y)^2$?

a) 4 b) 8 c) 6 d) $4\sqrt{2}$

Q2 Answer the following :-

1) If $X = (\sqrt{2} - 2)$, $Y = (\sqrt{2} + 2)$, find in the simplest form ;

a) $XY = -2$ b) $X + Y = 2\sqrt{2}$

2) Find in the simplest form $\sqrt[3]{128} + \sqrt[3]{16} - 2\sqrt[3]{54}$

$$4\sqrt[3]{2} + 2\sqrt[3]{2} - 6\sqrt[3]{2} = 0$$

3) Find in the simplest form .

a) $(\sqrt{7} - 2)^2 + (\sqrt{7} + 3)(\sqrt{7} - 1) = 15 - 2\sqrt{7}$

b) $\frac{(\sqrt{5})^n \times (\sqrt{3})^{2-n}}{3 \times (\sqrt{15})^{-n}} = \frac{(\sqrt{5})^n \times (\sqrt{3})^{2-n}}{3 \times (\sqrt{3})^{-n} \times (\sqrt{5})^{-n}}$

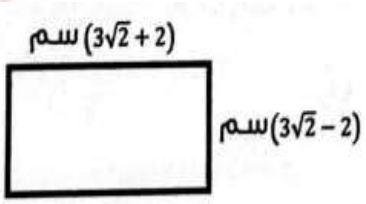
$= \frac{1}{3} \times (\sqrt{5})^{n-(-n)} (\sqrt{3})^{2-n-(-n)}$

$= \frac{1}{3} \times (\sqrt{5})^{2n} (\sqrt{3})^2$

$= \frac{1}{3} \times (\sqrt{5})^{2n} \times 3 = (\sqrt{5})^{2n}$

4) Make the denominator in the number $\frac{12}{\sqrt{3}}$ an integer $4\sqrt{3}$

5) Find the area of the opposite rectangle .



$(3\sqrt{2} + 2)(3\sqrt{2} - 2) = 14 \text{ cm}^2$

6) Using the number line represent the two intervals $X = [5, 7]$, $Y =]4, 5]$, then find

$X \cup Y =]4, 7]$

$X \cap Y = \{5\}$

$X - Y =]5, 7]$

$Y - X =]4, 5[$

7) Find in $\mathbb{R}$ the solution set of the equation $2X^2 - 3 = 15$ S.S = $\{-3, 3\}$