AHMED NASSR
MATH TEACHER

# MATH

## Feb & Mar Revision

## 1 St Prep


أحمد نصر

Follow for More!

## Q1: Choose the correct answer

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

(a) $\frac{-27}{125}$ (b) $\frac{-125}{27}$ (c) $\frac{27}{125}$ (d) $\frac{125}{27}$

**2** $(2x)^4$ = .....

(a) $2x^4$ (b) $16x$ (c) $16x^4$ (d) $16x^2$

**3** Fifth of $5^{25}$ = .....

(a) $5^{-5}$ (b) $5^{15}$ (c) $5^{24}$ (d) $1^{25}$

**4** If: $2^4 \times a = 2^{20}$, what is the value of a?

(a) $2^{16}$ (b) $2^{24}$ (c) $2^5$ (d) 2

**5** The greatest value of $(\frac{1}{8})^m$ , when m = .....

(a) – 1 (b) zero (c) 1 (d) 100

**6** $\frac{3^x}{3^{-y}}$ = .....

(a) $-\frac{x}{y}$ (b) $3^{x \div y}$ (c) $3^{x+y}$ (d) $3^{x-y}$

**7** $4^{-1} + 4^{-1} + 4^{-1} + 4^{-1}$ = .....

(a) $4^{-4}$ (b) $4^4$ (c) 1 (d) 16

**8** Which of the following numbers is written in scientific notation?

(a) $14.41 \times 10^{-5}$ (b) $0.4 \times 10^2$ (c) $35.4 \times 10^8$ (d) $1.1 \times 10^{-3}$

**9** The additive inverse of the number $(-5)^0$ is .....

(a) 1 (b) 5
(c) – 5 (d) $-(7)^0$

**10** If $xy^{-1} = \frac{1}{3}$, then $\frac{y}{x}$ = .....

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

**11** $\sqrt{25 + 144} = 5 +$ .....

(a) 12 (b) 13 (c) 8 (d) 6

**12** If $0.00043 = 4.3 \times 10^{n}$, Then n = .....

(a) –5 (b) –4 (c) 4 (d) 5

**13** If a = b, then $(\frac{x}{3y})^{b-a}$ = .....

(a) $\frac{x}{3y}$ (b) $\frac{3y}{x}$ (c) 1 (d) zero

**14** The multiplicative inverse of the number $(-1)^{45}$ is ..... .

(a) $(-1)^{43}$ (b) $(-1)^{44}$ (c) $(1)^{43}$ (d) $(1)^{44}$

**15** $(\frac{2}{3})^{-2}$ = .....

(a) $\frac{-9}{4}$ (b) $\frac{-4}{9}$ (c) $\frac{4}{9}$ (d) $\frac{9}{4}$

**16** $\sqrt[3]{x^{15}} = \sqrt{.....}$

(a) $x^{15}$ (b) $x^{45}$ (c) $x^{5}$ (d) $x^{10}$

**17** The solution set of the equation: $x^2 - 1 = 0$ in Q is .....

(a) {0} (b) {1} (c) {-1} (d) {1, –1}

**18** Which of the following is the greatest ?

(a) $6.3 \times 10^5$ (b) $9.8 \times 10^4$ (c) $5.2 \times 10^5$ (d) $7.3 \times 10^4$

**19** $0.0000073 = 7.3 \times$ .....

(a) $10^{-6}$ (b) $10^{-5}$ (c) $10^{5}$ (d) $10^{6}$

**20** $4^{10} + 4^{10} + 4^{10} + 4^{10} =$ .....

(a) $4^{10}$ (b) $4^{40}$ (c) $2^{9}$ (d) $4^{11}$

**21** The multiplicative inverse of the number $3^{-2}$ is ..... .

(a) $-3^{-2}$ (b) $3^{2}$ (c) $2^{3}$ (d) $-2^{3}$

**22** $(-1)^{104} + (-1)^{103} =$ ..... .

(a) 0 (b) −1 (c) 1 (d) 0

**23** If the volume of a cube is 64 $cm^3$: then its edge length is ..... cm.

(a) 4 (b) 8 (c) 16 (d) 64

**24** The S.S of the equation: $x^2 + 9 = 0$ in Q is .....

(a) {-9} (b) {-3 , 3} (c) {-3} (d) $\varnothing$

**25** If $3^x = 7$ , then $3^{x+1} =$ .....

(a) 49 (b) 9 (c) 21 (d) 8

**26** The scentific notation of the number $750 \times 10^{-6}$ is .....

(a) $7.5 \times 10^{-8}$ (b) $7.5 \times 10^{-7}$ (c) $7.5 \times 10^{-4}$ (d) $7.5 \times 10^{4}$

**27** If double the number $2^{50}$ equals $2^x$ , then x = ..... .

(a) 25 (b) 49 (c) 100 (d) 51

**28** If $0.0000503 = m \times 10^{-5}$, Then m = .....

(a) 503 (b) 5.03 (c) 50.3 (d) 0.503

**29** $\sqrt[3]{-64} + \sqrt{16} =$ .....

(a) zero (b) -8
(c) 8 (d) ±8





From confusion to clarity

Follow for More!

**30** The area of a square whose side length is $\sqrt{3}$ cm is ..... $cm^2$

(a) $4 \times \sqrt{3}$ (b) 9 (c) 3 (d) 6

**31** $(\frac{a}{b})^5 \times \frac{b^5}{a^5}$ = ..... ( where a ≠ zero , b ≠ zero )

(a) $(\frac{a}{b})^{10}$ (b) $\frac{a}{b}$ (c) ab (d) $(xy)^{zero}$

**32** The square whose area is 10 $cm^2$, its side length is ..... cm

(a) 100 (b) $\sqrt{10}$ (c) 10 (d) $\sqrt{100}$

## Q2: Answer The Following

**1** Find the S.S of the following in Q:

(a) $x^3 + 26 = -1$

(b) $2x^2 + 1 = 33$

(c) $(x - 1)^3 + 2 = -6$

(d) $3x^2 + 75 = 0$

(e) $2(x^2 - 3) = x^2 + 3$

(f) $(x - 1)^3 = 216$

**2** Write the result of the following in scientific notation:

$(4.5 \times 10^7) \times (4 \times 10^8)$

From confusion to clarity

Follow for More!

**3** Simplify the following to the simplest form: $(\frac{-1}{2})^2 \times \sqrt{\frac{81}{25}} \times \frac{4}{3}$

**4** Simplify to the simplest form: $\frac{5^7 \times 5^{-4}}{5^3}$

**5** If $x = \frac{2}{3}$ , and $y = -\frac{1}{2}$ , Find the value of: $x^2y^2$ and $(a - b)^{-1}$

**6** By using prime factors and exponents write each of the following:

(a) 180 = .....  (b) 324 = .....

**7** If a and b are the two square roots of c where $c \neq 0$, complete the following :

(a) a + b = .....  (b) $\frac{a}{b}$ = .....

**8** Put in the scientific notation : $0.000014 \times 10^2$

**9** Calculate the value of the following in the scientific notation:
$(3.6 \times 10^8) \times (1.8 \times 10^3)$

**10** The sum of the two square roots of the number 16 is ..... .

**11** Simplify the following to the simplest form: $1\frac{1}{3} \times \sqrt{\frac{81}{16}} \times (\frac{1}{2})^0$

**12** $2^2 + 2^2 = 2^{.....}$

**13** Simplify to the simplest form: $\frac{a^7 \times a^8 \times a^2}{a^3 \times a^9 \times a^5}$

**14** Calculate the value of the following in scientific notation:
$(5.4 \times 10^4) + (3.7 \times 10^5)$

**15** The total area of a cube is 294 square centimeters.
Find the length of its edge.

**16** Simplify: $\frac{x^3 \times x^{-2}}{x^{-5} \times x}$, Then find the numerical value of the result when: $x = -2$

**17** Find in the simplest form:

(a) $\left(\frac{3^4 \times 7^3}{7^4 \times 3^3}\right)^{-1}$ (b) $(7^0 \times 2^{-2})^{-3}$ (c) $\frac{8 \times 8^{-3}}{8^{-4}}$

**18** A square whose area is 0.81 $cm^2$, Find its perimeter.

**19** Find the Solution set of $4x^3 = -32$ in Z

## Q1: Choose the correct answer

**1** The inequality which represent the maximum speed of a car is 80 km/hr is .....

(a) $x > 80$ (b) $x < 80$ (c) $x \geq 80$ (d) $x \leq 80$

**2** If $x > 7$, then $-x$ .....

(a) $> -7$ (b) $\geq -7$ (c) $< -7$ (d) $\leq -7$

**3** If $\frac{x}{y} = 70$, then $\frac{x}{2y}$ = .....

(a) 35 (b) 68 (c) 72 (d) 140

**4** If $x - y = 4$, and $x + y = 7$, then $x^2 - y^2$ = .....

(a) 4 (b) 7 (c) 3 (d) 28

**5** The solution set of the inequality: $-4x > 3$ in $Z^+$ is .....

(a) { 0, –1 , –2, ...} (b) {0, 1, 2, 3, 4, ...} (c) {0} (d) ø

**6** If $x^2 = 16$, $y^2 = 9$ and $xy = 12$, then $(x - y)^2$ = .....

(a) 49 (b) 165 (c) -1 (d) 1

**7** If $x^2 = 10$, $y^2 = 7$, then $(x + y)(x - y)$ = .....

(a) 70 (b) 17 (c) 3 (d) -3

**8** One of the solutions of the inequality: $3 - x < 1$ in Z is .....

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

**9** $6y(3y^2 - 4y + 2)$ = ..... .

(a) $18y^3 + 24y^3 + 12y$ (b) $18y^3 - 4y + 2$
(c) $18y^2 - 24y + 2$ (d) $18y^3 - 24y^2 + 12y$

**10** If 3y is the side length of a square, then its area equals ..... .

(a) 12 y (b) 9 y (c) $9y^2$ (d) $81y^2$

**11** The coefficient of xy in $(2x + 3y)^2$ is ..... .

(a) 1 (b) 5 (c) 6 (d) 12

**12** If $(4x - 5)^2 = ax^2 + bx + c$, what is the value of a?

(a) 20 (b) –20 (c) 16 (d) –10

**13** k (3m + 2) = $36m^2 + 24m$, then k = ..... .

(a) 12 m (b) 12 (c) 18 m (d) 6 m

**14** If $(x - y)(2x + y) = 2x^2 + kxy - y^2$, then k = ..... .

(a) 3 (b) 4 (c) – 1 (d) 1

**15** A rectangle whose length is $3x^2$ cm, and its width is 5x cm, then its area is ..... $cm^2$.

(a) 15x (b) $15x^2$ (c) $8x^3$ (d) $15x^3$

**16** A rectangle with an area is $(x^2 - 9x + 18)$ $cm^2$. And its length is (x – 3) cm, then its width = ..... cm.

(a) x – 10 (b) x – 6 (c) x + 6 (d) x + 10

**17** ..... $\div (-2x^2y) = 12xy^2$

(a) 6 xy (b) – 6 x y (c) $24x^3y^3$ (d) $-24x^3y^3$

**18** If the volume of a cuboid is $(x^2 + 14x + 49)$ $cm^3$, and its base area is (x + 7) cm , then the height = ..... cm.

(a) x + 6 (b) x + 5 (c) x + 7 (d) x + 9

**19** If (x – 3) is one factor of $(x^2 + 4x - 21)$, then the other factor is ..... .

(a) x + 7 (b) x – 5 (c) x + 5 (d) x + 3

**20** The perimeter of the rectangle whose dimensions are 8x , 5x is .....

(a) $40x^2$ (b) 13 x (c) 40 x (d) 26 x

**21** If the quotient of ( $x^2 - 2x - 35$ ) divided by ( x + 5) is ( x + b ), what is the value of b?

(a) – 7 (b) 5 (c) – 5 (d) 7

**22** If $(x + 3)(x - 3) = x^2 + k$, then k = .....

(a) 6 (b) 9 (c) –6 (d) –9

**23** If –x > 4, then ..... .

(a) x > 4 (b) x < 4 (c) x < –4 (d) x > –4

**24** If $(2x + 3)(x - 5) = 2x^2 + bx - 15$, then b = .....

(a) –7x (b) –7 (c) 7x (d) 7

**25** If x < 0 < y, |x| > y, Then x + y ..... zero

(a) > (b) < (c) = (d) ≥

**26** The solution set of the equation: (x – 3)(x + 3) = 0 in Q is .....

(a) {3} (b) {–3} (c) Ø (d) {–3 , 3}

**27** If $\frac{x}{-3} < 2$, then x ..... – 6

(a) > (b) < (c) = (d) ≥

**28** If $(x + 5)(x - 5) = x^2 + b$, then b = .....

(a) 25 (b) –25 (c) 10 (d) -10

**29** The volume of a cuboid whose dimensions are 5x cm , 2x cm, and 2x cm, is ..... $cm^3$.

(a) 9x (b) $20x^2$
(c) $9x^3$ (d) $20x^3$





From confusion to clarity

Follow for More!

**30** ..... $\div 5m = 25\ m^2n$

(a) $125\ m^2n$ (b) $125\ m^3n$ (c) $m^3n$ (d) $25\ m^3n$

**31** $\frac{a+b}{c}$ = ..... .

(a) $\frac{a+b}{c}$ (b) $\frac{a}{b+c}$ (c) $\frac{a}{c}+\frac{b}{c}$ (d) $\frac{ab}{c}$

**32** $(x^3 + x^2) \div x^2$ = ..... .

(a) 0 (b) x (c) x + 1 (d) 2 x + 1

**33** If the area of rectangle is $24x^3$ and its with is 4x then its length is .....

(a) 6 x (b) $8\ x^2$ (c) $6x^2$ (d) $96\ x^4$

**34** If $(6\ x^2y^3 + k\ xy) \div 6\ x = xy^3 - 12\ y$ where $(x \neq 0)$, then $|k|$ = .....

(a) –72 (b) –2 (c) 2 (d) 72

**35** What is the value of m that's make $x^2 + 5x - m$ divisible by $x - 2$?

(a) 12 (b) 16 (c) 14 (d) 15

**36** If $(5x+2)^2 = a\ x^2 + b\ x + c$ , what is the value of b?

(a) 7 (b) 10 (c) 20 (d) 14

**37** The quotient of $x^2 + 3x - 40$ by $x + 8$ equals ..... .

(a) x + 13 (b) x + 5 (c) x – 5 (d) x – 13





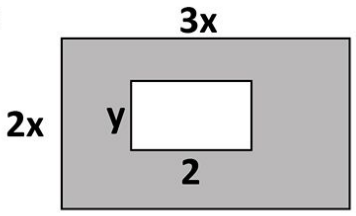
From confusion to clarity

Follow for More!

## Q2: Answer The Following

**1** Simplify in the simplest form: $(2m + 3)^2 + (2m - 3)(2m + 3)$
Then find the numerical value of the expression when m = 2

**2** Find in the simplest form the expression which represents the shaded part of the opposite figure:




**3** Find the solution set of the following inequalities in Z:

(a) $5 - 3x \geq 14$

(b) $3(x - 7) \geq 7(x - 3)$

(c) $3(2x - 1) > 9$

(d) $x - 3(x - 5) \geq x + 7$

**4** Calculate the area of a rectangle whose length is 5 units greater than its width, and whose width is equal to x units of length.

**5** Find in the simplest form each of the following:

(a) $-5m(m+2)$

(b) $(x+5)(x-5)$

(c) $(x+3)^2+(6-x)$

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

(e) $x(x^2-x-1)+3(2x^2+x+1)$

(f) $-3m^2(-2m+3n-1)$

(g) $(a+b)^2-(a+b)(a-b)$

(h) $(2x-1)(x^2-3x+4)$

**6** Simplify to the simplest form the expression: $2x(2x+1)+3x(x+2)$, then find the numerical value of the expression when $x=-1$

**7** Find $\dfrac{36x^4y-15xy^2}{18xy}$ in the simplest form

**8** If $(2x+1)$ is a factor of the expression $(2x^2-7x-4)$, then find the other factor ?

**9** Find the quotient of the following:

(a) $3x^2 + 10x - 8$ by $x + 4$

(b) $x^3 - 27$ by $x - 3$

**10** Reduce: $(x - 3)^2 - (x - 3)(x + 3)$

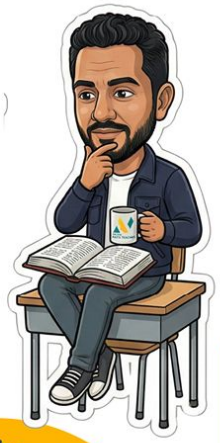
**11** Find the value of b that makes the expression $( 4x^2 + 11x + b )$ divisible by $( 4x - 1 )$

**12** $(x + 7)(x - 7) = x^2 + .....$

**13** If the area of a rectangle is $(4x^4 + 8x^3 + 12x^2)$ square units, and the length of one of its dimensions is $(4x^2)$ units of length, find the length of the other dimension in terms of x.

**14** Find the solution set of the following inequality in N:

$2x - 3 < 1$



From confusion to clarity

Follow for More!

## Q1: Choose the correct answer

**1** The area of the rhombus whose diagonal lengths are 6 cm, and 8cm, equals ..... $cm^2$

(a) 3 (b) 24 (c) 16 (d) 12

**2** The area of the square = $\frac{1}{2}$ of the product of the lengths of its .....

(a) sides (b) diagonals (c) heights (d) medians

**3** A rhombus is of area 60 $cm^2$ and the length of one of its diagonals equals 10 cm.then the length of the other diagonal equals ..... cm.

(a) 4 (b) 8 (c) 10 (d) 12

**4** A rhombus has a side length of 10 cm, and the lengths of its two diagonals are 12 cm and 16 cm. Its height = ..... cm.

(a) 96 (b) 10 (c) 9.6 (d) 6.9

**5** A square whose side length is S and its area is A, then its area if its side is 2S is .....

(a) A (b) 2A (c) 4A (d) $A^2$

**6** The area of the square whose diagonal length is 6 cm. equals ..... $cm^2$.

(a) 12 (b) 18 (c) 24 (d) 36

**7** The area of trapezium whose middle base is 7 cm, and its height is 6 cm equals ..... $cm^2$.

(a) 21 (b) 40 (c) 42 (d) 13

**8** The lengths of the bases of trapezium is 6 cm and 10 cm, then the length of its middle base is ..... cm.

(a) 16 (b) 9 (c) 15 (d) 8

## Q2: Answer The Following

1. A trapezium with a middle base of 19 cm and a height of 5 cm.
What is its area?

2. Determine the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 5 meters and 20 meters.

3. A trapezium has an area of 315 square centimeters, a height of 15 cm, and the ratio between the lengths of its bases is 3 : 4
What is the length of each base?

4. A trapezium with an area of 150 square meters has bases measuring 10 meters and 20 meters. Calculate its height

5. Find the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 4 meters and 25 meters.

AHMED NASSR
MATH TEACHER

# MATH

## Feb & Mar Revision

## 1 St Prep


# أحمد نصر

Follow for More!

## Q1: Choose the correct answer

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

(a) $\frac{-27}{125}$ (b) $\frac{-125}{27}$ (c) $\frac{27}{125}$ (d) $\frac{125}{27}$

**2** $(2x)^4$ = .....

(a) $2x^4$ (b) $16x$ (c) $16x^4$ (d) $16x^2$

**3** Fifth of $5^{25}$ = .....

(a) $5^{-5}$ (b) $5^{15}$ (c) $5^{24}$ (d) $1^{25}$

**4** If: $2^4 \times a = 2^{20}$, what is the value of a?

(a) $2^{16}$ (b) $2^{24}$ (c) $2^5$ (d) 2

**5** The greatest value of $(\frac{1}{8})^m$, when m = .....

(a) $-1$ (b) zero (c) 1 (d) 100

**6** $\frac{3^x}{3^{-y}}$ = .....

(a) $-\frac{x}{y}$ (b) $3^{x \div y}$ (c) $3^{x+y}$ (d) $3^{x-y}$

**7** $4^{-1} + 4^{-1} + 4^{-1} + 4^{-1}$ = .....

(a) $4^{-4}$ (b) $4^4$ (c) 1 (d) 16

**8** Which of the following numbers is written in scientific notation?

(a) $14.41 \times 10^{-5}$ (b) $0.4 \times 10^2$ (c) $35.4 \times 10^8$ (d) $1.1 \times 10^{-3}$

**9** The additive inverse of the number $(-5)^0$ is .....

(a) 1 (b) 5
(c) $-5$ (d) $-(7)^0$





From confusion to clarity

Follow for More!

**10** If $xy^{-1} = \frac{1}{3}$, then $\frac{y}{x}$ = .....

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

**11** $\sqrt{25 + 144} = 5 +$ .....

(a) 12 (b) 13 (c) 8 (d) 6

**12** If $0.00043 = 4.3 \times 10^{n}$, Then n = .....

(a) –5 (b) –4 (c) 4 (d) 5

**13** If a = b, then $(\frac{x}{3y})^{b-a}$ = .....

(a) $\frac{x}{3y}$ (b) $\frac{3y}{x}$ (c) 1 (d) zero

**14** The multiplicative inverse of the number $(-1)^{45}$ is ..... .

(a) $(-1)^{43}$ (b) $(-1)^{44}$ (c) $(1)^{43}$ (d) $(1)^{44}$

**15** $(\frac{2}{3})^{-2}$ = .....

(a) $\frac{-9}{4}$ (b) $\frac{-4}{9}$ (c) $\frac{4}{9}$ (d) $\frac{9}{4}$

**16** $\sqrt[3]{x^{15}} = \sqrt{.....}$

(a) $x^{15}$ (b) $x^{45}$ (c) $x^{5}$ (d) $x^{10}$

**17** The solution set of the equation: $x^2 - 1 = 0$ in Q is .....

(a) {0} (b) {1} (c) {-1} (d) {1, –1}

**18** Which of the following is the greatest ?

(a) $6.3 \times 10^5$ (b) $9.8 \times 10^4$ (c) $5.2 \times 10^5$ (d) $7.3 \times 10^4$

**19** $0.0000073 = 7.3 \times$ .....

(a) $10^{-6}$ (b) $10^{-5}$ (c) $10^{5}$ (d) $10^{6}$

**20** $4^{10} + 4^{10} + 4^{10} + 4^{10} =$ .....

(a) $4^{10}$ (b) $4^{40}$ (c) $2^{9}$ **(d) $4^{11}$**

**21** The multiplicative inverse of the number $3^{-2}$ is ..... .

(a) $-3^{-2}$ **(b) $3^{2}$** (c) $2^{3}$ (d) $-2^{3}$

**22** $(-1)^{104} + (-1)^{103}$ = ..... .

**(a) 0** (b) −1 (c) 1 (d) 0

**23** If the volume of a cube is 64 $cm^3$: then its edge length is ..... cm.

**(a) 4** (b) 8 (c) 16 (d) 64

**24** The S.S of the equation: $x^2 + 9 = 0$ in Q is .....

(a) {-9} (b) {-3 , 3} (c) {-3} **(d) ∅**

**25** If $3^x = 7$ , then $3^{x+1}$ = .....

(a) 49 (b) 9 **(c) 21** (d) 8

**26** The scentific notation of the number $750 \times 10^{-6}$ is .....

(a) $7.5 \times 10^{-8}$ (b) $7.5 \times 10^{-7}$ **(c) $7.5 \times 10^{-4}$** (d) $7.5 \times 10^{4}$

**27** If double the number $2^{50}$ equals $2^x$ , then x = ..... .

(a) 25 (b) 49 (c) 100 **(d) 51**

**28** If $0.0000503 = m \times 10^{-5}$, Then m = .....

(a) 503 **(b) 5.03** (c) 50.3 (d) 0.503

**29** $\sqrt[3]{-64} + \sqrt{16}$ = .....

**(a) zero** (b) -8

(c) 8 (d) ±8

**30** The area of a square whose side length is $\sqrt{3}$ cm is ..... $cm^2$

(a) $4 \times \sqrt{3}$ (b) 9 (c) 3 (d) 6

**31** $(\frac{a}{b})^5 \times \frac{b^5}{a^5}$ = ..... ( where a ≠ zero , b ≠ zero )

(a) $(\frac{a}{b})^{10}$ (b) $\frac{a}{b}$ (c) ab (d) $(xy)^{zero}$

**32** The square whose area is 10 $cm^2$, its side length is ..... cm

(a) 100 (b) $\sqrt{10}$ (c) 10 (d) $\sqrt{100}$

## Q2: Answer The Following

**1** Find the S.S of the following in Q:

(a) $x^3 + 26 = -1$

{–3}

(b) $2x^2 + 1 = 33$

{–4 , 4}

(c) $(x - 1)^3 + 2 = -6$

{–1}

(d) $3x^2 + 75 = 0$

∅

(e) $2(x^2 - 3) = x^2 + 3$

{-3, 3}

(f) $(x - 1)^3 = 216$

{7}

**2** Write the result of the following in scientific notation:

$(4.5 \times 10^7) \times (4 \times 10^8)$

$1.8 \times 10^{16}$

From confusion to clarity

Follow for More!

**3** Simplify the following to the simplest form: $(\frac{-1}{2})^2 \times \sqrt{\frac{81}{25}} \times \frac{4}{3}$

$\frac{3}{5}$

**4** Simplify to the simplest form: $\frac{5^7 \times 5^{-4}}{5^3}$

1

**5** If $x = \frac{2}{3}$ , and $y = -\frac{1}{2}$ , Find the value of: $x^2y^2$ and $(a - b)^{-1}$

$\frac{6}{7}$

**6** By using prime factors and exponents write each of the following:

(a) 180 = $2^2 \times 3^2 \times 5$

(b) 324 = $2^2 \times 3^4$

**7** If a and b are the two square roots of c where c ≠ 0, complete the following :

(a) a + b = 0

(b) $\frac{a}{b}$ = -1

**8** Put in the scientific notation : $0.000014 \times 10^2$

$1.4 \times 10^{-3}$

**9** Calculate the value of the following in the scientific notation:
$(3.6 \times 10^8) \times (1.8 \times 10^3)$

$6.48 \times 10^{11}$

**10** The sum of the two square roots of the number 16 is 0.

**11** Simplify the following to the simplest form: $1\frac{1}{3} \times \sqrt{\frac{81}{16}} \times (\frac{1}{2})^0$

3

**12** $2^2 + 2^2 = 2^3$

**13** Simplify to the simplest form: $\frac{a^7 \times a^8 \times a^2}{a^3 \times a^9 \times a^5}$

1

**14** Calculate the value of the following in scientific notation:
$(5.4 \times 10^4) + (3.7 \times 10^5)$

$4.24 \times 10^5$

**15** The total area of a cube is 294 square centimeters.
Find the length of its edge.

Length of edge = 7 cm

**16** Simplify: $\frac{x^3 \times x^{-2}}{x^{-5} \times x}$, Then find the numerical value of the result when: x = –2

$x^5$ The Value: -32

**17** Find in the simplest form:

(a) $\left(\frac{3^4 \times 7^3}{7^4 \times 3^3}\right)^{-1}$ (b) $(7^0 \times 2^{-2})^{-3}$ (c) $\frac{8 \times 8^{-3}}{8^{-4}}$

$\frac{7}{3}$ 64 64

**18** A square whose area is 0.81 $cm^2$, Find its perimeter.

3.6 cm

**19** Find the Solution set of $4x^3 = -32$ in Z

S.S = {-2}

## Q1: Choose the correct answer

**1** The inequality which represent the maximum speed of a car is 80 km/hr is .....

(a) $x > 80$ (b) $x < 80$ (c) $x \geq 80$ **(d) $x \leq 80$**

**2** If $x > 7$, then $-x$ .....

(a) $> -7$ (b) $\geq -7$ **(c) $< -7$** (d) $\leq -7$

**3** If $\frac{x}{y} = 70$, then $\frac{x}{2y}$ = .....

**(a) 35** (b) 68 (c) 72 (d) 140

**4** If $x - y = 4$, and $x + y = 7$, then $x^2 - y^2$ = .....

(a) 4 (b) 7 (c) 3 **(d) 28**

**5** The solution set of the inequality: $-4x > 3$ in $Z^+$ is .....

(a) { 0, –1 , –2, ...} (b) {0, 1, 2, 3, 4, ...} (c) {0} **(d) ø**

**6** If $x^2 = 16$, $y^2 = 9$ and $xy = 12$, then $(x - y)^2$ = .....

(a) 49 (b) 165 (c) -1 **(d) 1**

**7** If $x^2 = 10$, $y^2 = 7$, then $(x + y)(x - y)$ = .....

(a) 70 (b) 17 **(c) 3** (d) -3

**8** One of the solutions of the inequality: $3 - x < 1$ in Z is .....

(a) 0 (b) 1 (c) 2 **(d) 3**

**9** $6y(3y^2 - 4y + 2)$ = ..... .

(a) $18y^3 + 24y^3 + 12y$ (b) $18y^3 - 4y + 2$

(c) $18y^2 - 24y + 2$ **(d) $18y^3 - 24y^2 + 12y$**

**10** If 3y is the side length of a square, then its area equals ..... .

(a) 12 y (b) 9 y (c) $9y^2$ (d) $81y^2$

**11** The coefficient of xy in $(2x + 3y)^2$ is ..... .

(a) 1 (b) 5 (c) 6 (d) 12

**12** If $(4x - 5)^2 = ax^2 + bx + c$, what is the value of a?

(a) 20 (b) –20 (c) 16 (d) –10

**13** $k(3m + 2) = 36m^2 + 24m$, then k = ..... .

(a) 12 m (b) 12 (c) 18 m (d) 6 m

**14** If $(x - y)(2x + y) = 2x^2 + kxy - y^2$, then k = ..... .

(a) 3 (b) 4 (c) – 1 (d) 1

**15** A rectangle whose length is $3x^2$ cm, and its width is 5x cm, then its area is ..... $cm^2$.

(a) 15x (b) $15x^2$ (c) $8x^3$ (d) $15x^3$

**16** A rectangle with an area is $(x^2 - 9x + 18)$ $cm^2$. And its length is $(x - 3)$ cm, then its width = ..... cm.

(a) x – 10 (b) x – 6 (c) x + 6 (d) x + 10

**17** ..... $\div (-2x^2y) = 12xy^2$

(a) 6 xy (b) – 6 x y (c) $24x^3y^3$ (d) $-24x^3y^3$

**18** If the volume of a cuboid is $(x^2 + 14x + 49)$ $cm^3$, and its base area is $(x + 7)$ cm , then the height = ..... cm.

(a) x + 6 (b) x + 5 (c) x + 7 (d) x + 9

**19** If $(x - 3)$ is one factor of $(x^2 + 4x - 21)$, then the other factor is ..... .

(a) x + 7 (b) x – 5 (c) x + 5 (d) x + 3

**20** The perimeter of the rectangle whose dimensions are 8x , 5x is .....

(a) $40x^2$ (b) 13 x (c) 40 x **(d) 26 x**

**21** If the quotient of ( $x^2 - 2x - 35$ ) divided by ( x + 5) is ( x + b ), what is the value of b?

**(a) – 7** (b) 5 (c) – 5 (d) 7

**22** If $(x + 3)(x - 3) = x^2 + k$, then k = .....

(a) 6 (b) 9 (c) –6 **(d) –9**

**23** If –x > 4, then ..... .

(a) x > 4 (b) x < 4 **(c) x < –4** (d) x > –4

**24** If $(2x + 3)(x - 5) = 2x^2 + bx - 15$, then b = .....

(a) –7x **(b) –7** (c) 7x (d) 7

**25** If x < 0 < y, |x| > y, Then x + y ..... zero

(a) > **(b) <** (c) = (d) ≥

**26** The solution set of the equation: (x – 3)(x + 3) = 0 in Q is .....

(a) {3} (b) {–3} (c) Ø **(d) {–3 , 3}**

**27** If $\frac{x}{-3} < 2$, then x ..... – 6

**(a) >** (b) < (c) = (d) ≥

**28** If $(x + 5)(x - 5) = x^2 + b$, then b = .....

(a) 25 **(b) –25** (c) 10 (d) -10

**29** The volume of a cuboid whose dimensions are 5x cm , 2x cm, and 2x cm, is ..... $cm^3$.

(a) 9x (b) $20x^2$
(c) $9x^3$ **(d) $20x^3$**





From confusion to clarity

Follow for More!

**30** ..... ÷ $5m = 25\ m^2n$

(a) $125\ m^2n$ (b) $125\ m^3n$ (c) $m^3n$ (d) $25\ m^3n$

**31** $\frac{a+b}{c}$ = ..... .

(a) $\frac{a+b}{c}$ (b) $\frac{a}{b+c}$ (c) $\frac{a}{c}+\frac{b}{c}$ (d) $\frac{ab}{c}$

**32** $(x^3 + x^2) \div x^2$ = ..... .

(a) 0 (b) x (c) $x + 1$ (d) $2x + 1$

**33** If the area of rectangle is $24x^3$ and its with is $4x$ then its length is .....

(a) $6x$ (b) $8x^2$ (c) $6x^2$ (d) $96x^4$

**34** If $(6x^2y^3 + kxy) \div 6x = xy^3 - 12y$ where $(x \neq 0)$, then $|k|$ = .....

(a) $-72$ (b) $-2$ (c) 2 (d) 72

**35** What is the value of m that's make $x^2 + 5x - m$ divisible by $x - 2$?

(a) 12 (b) 16 (c) 14 (d) 15

**36** If $(5x+2)^2 = ax^2 + bx + c$ , what is the value of b?

(a) 7 (b) 10 (c) 20 (d) 14

**37** The quotient of $x^2 + 3x - 40$ by $x + 8$ equals ..... .

(a) $x + 13$ (b) $x + 5$ (c) $x - 5$ (d) $x - 13$





From confusion to clarity

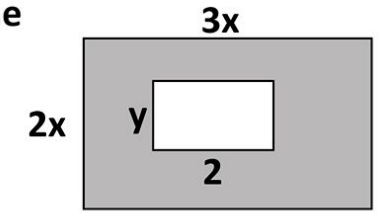
Follow for More!

## Q2: Answer The Following

**1** Simplify in the simplest form: $(2m + 3)^2 + (2m - 3)(2m + 3)$
Then find the numerical value of the expression when m = 2

$8m^2 + 12m$ $56$

**2** Find in the simplest form the expression which represents the shaded part of the opposite figure:




$6x^2 - 2y$

**3** Find the solution set of the following inequalities in Z:

(a) $5 - 3x \geq 14$

S.S = {-3, -4, -5, ...}

(b) $3(x - 7) \geq 7(x - 3)$

S.S = {0, -1, -2, ...}

(c) $3(2x - 1) > 9$

S.S = {3, 4, 5, ...}

(d) $x - 3(x - 5) \geq x + 7$

S.S = {2, 1, 0, -1, ...}

**4** Calculate the area of a rectangle whose length is 5 units greater than its width, and whose width is equal to x units of length.

Area = Length × Width = $(x + 5) \times x = x^2 + 5x$

**5** Find in the simplest form each of the following:

(a) $-5m(m+2)$

$-5m^2 - 10m$

(b) $(x+5)(x-5)$

$x^2 - 25$

(c) $(x+3)^2 + (6-x)$

$x^2 + 5x + 15$

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

$49 - 25x^2$

(e) $x(x^2 - x - 1) + 3(2x^2 + x + 1)$

$x^3 + 5x^2 + 2x + 3$

(f) $-3m^2(-2m + 3n - 1)$

$6m^3 - 9m^2n + 3m^2$

(g) $(a+b)^2 - (a+b)(a-b)$

$2ab + 2b^2$

(h) $(2x-1)(x^2 - 3x + 4)$

$2x^3 - 7x^2 + 11x - 4$

**6** Simplify to the simplest form the expression: $2x(2x+1) + 3x(x+2)$, then find the numerical value of the expression when $x = -1$

$7x^2 + 8x$ $\qquad$ $-1$

**7** Find $\dfrac{36x^4y - 15xy^2}{18xy}$ in the simplest form

$2x^3 - \dfrac{5}{6}y$

**8** If $(2x+1)$ is a factor of the expression $(2x^2 - 7x - 4)$, then find the other factor ?

$(x - 4)$

**9** Find the quotient of the following:

(a) $3x^2 + 10x - 8$ by $x + 4$

$3x - 2$

(b) $x^3 - 27$ by $x - 3$

$x^2 + 3x + 9$

**10** Reduce: $(x - 3)^2 - (x - 3)(x + 3)$ $-6x + 18$

**11** Find the value of b that makes the expression $( 4x^2 + 11x + b )$ divisible by $( 4x - 1 )$

$b = -3$

**12** $(x + 7)(x - 7) = x^2 +$ ..... $-49$.

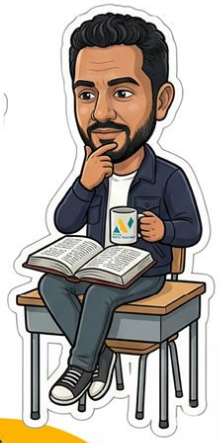
**13** If the area of a rectangle is $(4x^4 + 8x^3 + 12x^2)$ square units, and the length of one of its dimensions is $(4x^2)$ units of length, find the length of the other dimension in terms of x.

$x^2 + 2x + 3$

**14** Find the solution set of the following inequality in N:

$2x - 3 < 1$

S.S = {0, 1}



From confusion to clarity

Follow for More!

## Q1: Choose the correct answer

**1** The area of the rhombus whose diagonal lengths are 6 cm, and 8cm, equals ..... $cm^2$

(a) 3 (b) 24 (c) 16 (d) 12

**2** The area of the square = $\frac{1}{2}$ of the product of the lengths of its .....

(a) sides (b) diagonals (c) heights (d) medians

**3** A rhombus is of area 60 $cm^2$ and the length of one of its diagonals equals 10 cm.then the length of the other diagonal equals ..... cm.

(a) 4 (b) 8 (c) 10 (d) 12

**4** A rhombus has a side length of 10 cm, and the lengths of its two diagonals are 12 cm and 16 cm. Its height = ..... cm.

(a) 96 (b) 10 (c) 9.6 (d) 6.9

**5** A square whose side length is S and its area is A, then its area if its side is 2S is .....

(a) A (b) 2A (c) 4A (d) $A^2$

**6** The area of the square whose diagonal length is 6 cm. equals ..... $cm^2$.

(a) 12 (b) 18 (c) 24 (d) 36

**7** The area of trapezium whose middle base is 7 cm, and its height is 6 cm equals ..... $cm^2$.

(a) 21 (b) 40 (c) 42 (d) 13

**8** The lengths of the bases of trapezium is 6 cm and 10 cm, then the length of its middle base is ..... cm.

(a) 16 (b) 9 (c) 15 (d) 8

## Q2: Answer The Following

**1** A trapezium with a middle base of 19 cm and a height of 5 cm.
What is its area?

95 cm²

---

**2** Determine the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 5 meters and 20 meters.

10 meters

---

**3** A trapezium has an area of 315 square centimeters, a height of 15 cm, and the ratio between the lengths of its bases is 3 : 4
What is the length of each base?

18 cm  24 cm

---

**4** A trapezium with an area of 150 square meters has bases measuring 10 meters and 20 meters. Calculate its height

10 meters

---

**5** Find the length of the diagonal of a square whose area is equal to the area of a rhombus with diagonal lengths of 4 meters and 25 meters.

10 meters

---

AHMED NASSR

From confusion to clarity

Follow for More!