MATHS

BOOKS - FULL MARKS MATHS (TAMIL ENGLISH)

ALGEBRA

Progress Check

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1. $(x + 3)$ is a factor of p(x) , if p(_) =0

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2. (3-x) is a factor of p(x) , if p(_) =0

3. (x-3) is a factor of p(x) , if p(_) =0

4. (-x-b) is a factor of p(x) , if p(_) =0

5. (-x+b) is a factor of p(x) , if p(_) =0

6. Expand the following and verify

(i) $(a + b + c)^2 = (-a - b - c)^2$

(ii) $(-a + b + c)^2 = (a - b - c)^2$

(iii) $(a - b - c)^2 = (-a + b - c)^2$

(iv) $(a + b - c)^2 = (-a - b + c)^2$

7. Prove (i)

$$\left(a + \frac{1}{a}\right)^2 + \left(a - \frac{1}{a}\right)^2 = 2\left(a^2 + \frac{1}{a^2}\right)^2$$

(ii) $\left(a + \frac{1}{a}\right)^2 - \left(a - \frac{1}{a}\right)^2 = 4$

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8. Examine if (3,3) will be a solution for the simultaneous linear equations 2x-5y-2=0 and x+y-6=0 by drawing a graph.

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1. Which of the following expression are polynomial .if not give reason :

(i) $\dfrac{1}{x^2} + 3x - 4$

(ii) $x^2(x - 1)$

(iii) $\dfrac{1}{x}(x + 5)$

(iv) $\dfrac{1}{x^{-2}} + \dfrac{1}{x^{-1}} + 7$

(v) $\sqrt{5}x^2 + \sqrt{3}x + \sqrt{2}$

(vi) $m^2 - 3\sqrt{m} + 7m - 10$

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2. Write the coefficient of x^2 and x is each of the following polynomials.

$\pi x^2 - x + 2$

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3. Find the degree of the following polynomials.

$1 - \sqrt{2}y^2 + y^7$

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4. Write the following polynomials is standard form.

(i) $x - 9 + \sqrt{7}x^3 + 6x^2$

(ii) $\sqrt{2}x^2 - \dfrac{7}{2}x^4 + x - 5x^3$

(iii) $7x^3 - \dfrac{6}{5}x^3 + 4x - 1$

(iv) $y^2 + \sqrt{5}y^3 - 11 - \dfrac{7}{3}y + 9y^4$

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5. Add the following polynomials and find the degree of the resultant polynomials

(i)

$$p(x) = 6x^2 - 7x + 2 \qquad , q(x) = 6x^2 - 7x + 15$$

(ii)

$$h(x) = 7x^3 - 6x + 1 \qquad , f(x) = 7x^3 + 17x - 9$$

(iii)

$$f(x) = 16x^4 - 5x^2 + 9 \qquad , g(x) = -6x^3 + 7x - 15$$

6. Subtract the second polynomials from the first polynomials and find the degree of the resultant polynomials.

(i) $p(x) = 7x^2 + 6x - 1, q(x) = 6x - 9$

(ii) $f(y) = 6y^2 - 7y + 2, g(y) = 7y + y^3$

(iii)

$$h(z) = z^5 - 6z^4 + z \qquad , f(z) = 6z^2 + 10z - 7$$

7. What should be added to $2x^3 + 6x^2 - 5x + 8$ to get $3x^3 - 2x^2 + 6x + 15$?

8. What must be subtracted from $2x^4 + 4x^2 - 3x + 7$ to get $3x^3 - x^2 + 2x + 1$?

9. Multiply the following polynomials and find the degree of the resultant polynomials :

(i) $p(x) = x^2 - 9$, $q(x) = 6x^2 + 7x - 2$

(ii) $f(x) = 7x + 2$, $g(x) = 15x - 9$

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10. The cost of a chocolate is Rs. $(x + y)$ and Amir bought $(x + y)$ chocolates. Find the total amount paid by him in terms of x and y. If x = 10, y = 5 find the amount paid by him.

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11. The length of a rectangle is $(3x + 2)$ units and it's breadth is $(3x - 2)$ units. Find its area in terms of x. What will be the area if x = 20 units.

12. p(x) is a polynomial of degree 1 and q(x) is a polynomial of degree 2. What kind of the polynomial $p(x) \times q(x)$ is ?

Exercise 3 2

1. Find the value of the polynomial $f(y) = 6y - 3y^2 + 3$ at

(i) $y = 1$

(ii) $y = -1$

(iii) $y = 0$

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2. If $p(x) = x^2 - 2\sqrt{2}x + 1$, find $p(2\sqrt{2})$

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3. Find the zeros of the polynomial in each of the following.

(i) $p(x) = x - 3$

(ii) $p(x) = 2x + 5$

(iii) $q(y) = 2y - 3$

(iv) $f(z) = 8z$

(v) $p(x) = ax$ when a $\neq$ 0

(vi) h(x) =ax + b , a ne 0, a, b in R `

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4. Find the roots of the polynomial equations.

(i) $5x - 6 = 0$

(ii) $x + 3 = 0$

(iii) $10x + 9 = 0$

(iv) $9x - 4 = 0$

5. Verify whether the following are zeros of the polynomial , Indicted against them , or not,

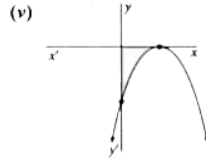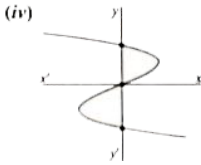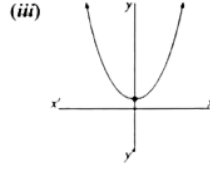(i) $p(x) = 2x - 1, x = \dfrac{1}{2}$

(ii) $p(x) = x^3 - 1, x = 1$
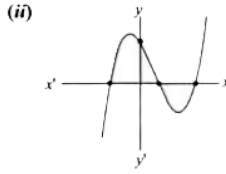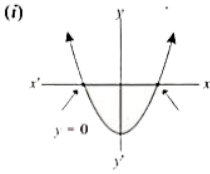
(iii) $p(x) = ax + b, x = \dfrac{-b}{a}$

(iv) $p(x) = (x + 3)(x - 4), x = -3, x = 4$

6. Find the number of zeros of the following polynomials represented by their graph ,

(i)   (ii)   (iii)

(iv)   (v)

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Exercise 3 3

1. Check whether p(x) is a multiple of g(x) or not.

$$p(x) = x^3 - 5x^2 + 4x - 3, \; g(x) = x - 2$$

2. By remainder theorem , find the remainder when

p(x) is divided by g(x) where ,

(i) $p(x) = x^3 - 2x^2 - 4x - 1, g(x) = x + 1$

(ii) $p(x) = 4x^3 - 12x^2 + 14x - 3, g(x) = 2x - 1$

(iii) $p(x) = x^3 - 3x^2 + 4x + 50, g(x) = x - 3$

3. Find the remainder when $3x^3 - 4x^2 + 7x - 5$ is

dividend by $(x + 3)$

4. What is the remainder when $x^{2018} + 2018$ is divided by x-1 .

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5. For what value of k is the polynomial $p(x) = 2x^3 - kx^2 + 3x + 10$ exactly divisible by (x-2).

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6. If two polynomials $2x^3 + ax^2 + 4x - 12$ and $x^3 + x^2 - 2x + a$ leave the same remainder when divided by (x-3) , find the value of a. and also find the remainder.

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7. Determine whether (x-1) is a factor of the following polynomials:

(i) $x^3 + 5x^2 - 10x + 4$

(ii) $x^4 + 5x^2 - 5x + 1$

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8. Using factor theorem, show that (x-5) is a factor of the polynomial $2x^3 - 5x^2 - 28x + 15$

9. Determine the value of m, if $(x + 3)$ is a factor of $x^3 - 3x^2 - mx + 24$

10. If both (x-2) and $\left(x - \dfrac{1}{2}\right)$ are the factors of $ax^2 + 5x + b$, then show that a =b .

11. If (x-1) divides the polynomial

$kx^3 - 2x^2 + 25x - 26$ without remainder , then

find the value of k.

12. Check if $(x + 2)$ and $(x - 4)$ are the sides of a

rectangle whose area is $x^2 - 2x - 8$ by using

factor theorem.

1. Expand the following:

(i) $(2x + 3y + 4z)^2$

(ii) $(-p + 2q + 3r)^2$

(iii) $(2p + 3)(2p - 4)(2p - 5)$

(iv) $(3a + 1)(3a - 2)(3a + 4)$

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2. Using algebra identity , find the coefficients of x^2, x and constant term without actual expansion.

(i) $(x + 5)(x + 6)(x + 7)$

(ii) $(2x + 3)(2x - 5)(2x - 6)$

3. If

$$(x + a)(x + b)(x + c) = x^3 + 14x^2 + 59x + 70,$$

find the value of

(i) $a + b + c$

(ii) $\dfrac{1}{a} + \dfrac{1}{b} + \dfrac{1}{C}$

(iii) $a^2 + b^2 + c^2$

(iv) $\dfrac{a}{bc} + \dfrac{b}{ac} + \dfrac{c}{ab}$

4. Expand

(i) $(3a - 4b)^3$

(ii) $\left[x + \dfrac{1}{y}\right]^3$

5. Evaluate the following by using identities:

(i) 98^3

(ii) 1001^3

6. If $(x + y + z) = 9$ and $(xy + yz + zx) = 26$

then find the value of $x^2 + y^2 z^2$

7. Find $27a^3 + 64b^3$, if $3a + 4b = 10$ and ab = 2

8. Find $x^3 - y^3$, find $x - y = 5$ and xy = 14

9. If $a + \dfrac{1}{a} = 6$, then find the value of $a^3 + \dfrac{1}{a^3}$

10. If $x^2 + \dfrac{1}{x^2} = 23$, then find the value of $x + \dfrac{1}{x}$

and $x^3 + \dfrac{1}{x^3}$

11. If $\left(y - \dfrac{1}{y}\right)^3 = 27$, then find the value of

$y^3 - \dfrac{1}{y^3}$

12. Simplify

(i)

$$(2a + 3b + 4c)\left(4a^2 + 9b^2 + 16c^2 - 6ab - 12bc - 8ca\right)$$

(ii)

$$(x - 2y + 3z)\left(x^2 + 4y^2 + 9z^2 + 2xy + 6yz - 3xz\right)$$

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13. by using identity evaluate the following

(i) $7^3 - 10^3 + 3^3$

(ii) $1 + \dfrac{1}{8} - \dfrac{27}{8}$

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14. If $2x - 3y - 4z = 0,$ then find

$8x^3 - 27y^3 - 64z^3$

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1. Factorise the following expressions:

(i) $2a^2 + 4a^2b + 8a^2c$

(ii) $ab - ac - mb + mc$

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2. Factorise the following expressions:

(i) $x^2 + 4x + 4$

(ii) $3a^2 - 24ab + 48b^2$

(iii) $x^5 - 16x$

(iv) $m^2 + \dfrac{1}{m^2} - 23$

(v) $6 - 216x^2$

(vi) $a^2 + \dfrac{1}{a^2} - 18$

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3. Factorise the following expression:

(i) $4x^2 + 9y^2 + 25z^2 + 12xy + 30yz + 20zx$

(ii) $25x^2 + 4y^2 + 9z^2 - 20xy + 12yz - 30zx$

4. Factorise the following expression:

(i) $8x^3 + 125y^3$

(ii) $27x^3 - 8y^3$

(iii) $a^6 - 64$

5. Factorise the following:

(i) $x^3 + 8y^3 + 6xy - 1$

(ii) $l^3 - 8m^3 - 27n^3 - 18lmn$

Exercise 3 6

1. Factorise the following.

(i) $x^2 + 10x + 24$

(ii) $z^2 + 4z - 12$

(iii) $p^2 - 6p - 16$

(iv) $t^2 + 72 - 17t$

(v) $y^2 - 16y - 80$

(vi) $a^2 + 10a - 600$

2. Factorise the following .

(I) $2a^2 + 9a + 10$

(ii) $5x^2 - 29xy - 42y^2$

(iii) $9 - 18x + 8x^2$

(iv) $6x^2 + 16xy + 8y^2$

(v) $12x^2 + 36x^2y + 27y^2x^2$

(vi) $(a + b)^2 + 9(a + b) + 18$

3. Factorise the following.

(i) $(p - q)^2 - 6(p - q) - 16$

(ii) $m^2 + 2mn - 24n^2$

(iii) $\sqrt{5}a^2 + 2a - 3\sqrt{5}$

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

(v) $8m^3 - 2m^2n - 15mn^2$

(vi) $\dfrac{1}{x^2} + \dfrac{1}{y^2} + \dfrac{2}{xy}$

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Exercise 3 7

1. Find the quotient and remainder of the following.

(i) $\left(4x^3 + 6x^2 - 23x + 18\right) + (x + 3)$

(ii) $\left(8y^3 - 16y^2 + 16y - 15\right) + (2y - 1)$

(iii) $\left(8x^3 - 1\right) + (2x - 1)$

(iv) $\left(-18z + 14z^2 + 24z^3 + 18\right) + (3z + 4)$

2. The area of a rectangle is $x^2 + 7x + 12$. If its breath is $(x + 3)$, then find its length.

3. The base of a parallelogram is $(5x + 4)$. Find its height, if the area is $25x^2 - 16$.

4. The sum of $(x + 5)$ observations is $(x^3 + 125)$.

Find the mean of the observations.

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5. Find the quotient and remainder for the following using synthetic division :

$(x^3 + x^2 - 7x - 3) \div (x - 3)$

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6. If the quotient obtained on dividing $\left(8x^4 - 2x^2 + 6x - 7\right)$ by $(2x + 1)$ is $\left(4x^3 + px^2 - qx + 3\right)$, then find p,q and also the remainder.

7. If the quotient obtained on dividing $3x^3 - 11x^2 - 34x + 106 by x - 3 is$ 3x^(2) +ax+b. ` then find a, b and also the remainder.

1. Factories each of the following polynomials using synthetic division :

$$x^3 - 3x^2 - 10x + 24$$

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1. Find the GCD for the following:

(i) p^5, p^{11}, p^9

(ii) $4x^3, y^3, z^3$

(iii) $9a^2b^2c^3$, $15a^3b^2c^4$

(iv) $64x^8$, $240x^6$

(v) ab^2c^3, a^2b^3c, a^3bc^2

(vi) $35x^5y^3z^4$, $49x^2yz^3$, $14xy^2z^2$

(vii) $25ab^3c$, $100a^2bc$, $125ab$

(viii) $3abc$, $5xyz$, $7pqr$

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2. Find the GCD for the following.

(i) $(2x + 5)$, $(5x + 2)$

(ii) a^{m+1}, a^{m+2}, a^{m+3}

(iii) $2a^2 + a$, $4a^2 - 1$

(iv) $a^3 - 9ax^2$, $(a - 3x)^2$

Exercise 3 10

1. Draw the graph for the following:

(i) $y = 2x$

(ii) $y = 4x - 1$

(iii) $y = \left(\dfrac{3}{2}\right)x + 3$

(iv) $3x + 2y = 14$

2. Solve graphically

$$x + y = 7, x - y = 3$$

3. Two cars are 100 miles apart. If they drive towards each other they will meet in 1 hour. If they drive in the same direction they will meet in 2 hours. Find their speed by using graphical method.

Exercise 3 11

1. Solve using the method of substitution.

(i) $2x - 3y = 7, 5x + y = 9$

(ii) $1.5x + 0.1y = 6.2, 3x - 0.4y = 11.2$

(iii) $10\% \, of \, x + 20\% \, of \, y = 24, 3x - y = 20$

(iv) $\sqrt{2}x - \sqrt{3}y = 1, \sqrt{3}x - \sqrt{8}y = 0$

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2. Raman's age is three times the sum of the ages of his two sons. After 5 years his age will be twice the sum of the ages of his two sons. Find the age of Raman.

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3. The middle digit of a number between 100 and 1000 is zero and the sum of the other digit is 13. If the digits are reversed , the number so formed exceed the original number by 495. Find the number.

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Exercise 3 12

1. Solve by the method of elimination

$2x - y = 3, 3x + y = 7$

(ii) $x - y = 5, 3x + 2y = 25$

(iii) $\dfrac{x}{10} + \dfrac{y}{5} = 14, \dfrac{x}{8} + \dfrac{y}{6} = 15$

(iv) $3(2x + y) = 7xy, 3(x + 3y) = 11xy$

(v) $\dfrac{4}{x} + 5y = 7, \dfrac{3}{x} + 4y = 5$

(vi) $13x + 11y = 70, 11x + 13y = 74$

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2. The monthly income of A and B are in the ratio

$3:4$ and their monthly expenditures are in the ratio

$5:7$. If each saves Rs. 5,000 per month, find the monthly income of each .

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3. Five years ago, a man was seven times as old as his son, while five years hence, the man will be four times as old his son. Find thie present age.

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Exercise 3 13

1. Solve by cross-multiplication method.

(i) $8x - 3y = 12$, $5x = 2y + 7$

(ii) $6x + 7y - 11 = 0$, $5x + 2y = 13$

(iii) $\dfrac{2}{x} + \dfrac{3}{y} = 5$, $\dfrac{3}{x} - \dfrac{1}{y} + 9 = 0$

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2. Akshaya has 2 rupee coins and 5 rupee coins in her purse. If in all she has 80 coins totalling Rs. 220, how many coins of each kind does she have.

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3. It takes 24 hours to fill a swimming pool using two pipes. If the pipe of larger diameter is used for 8 hours and the pipe of the smaller diameter is used for 18 hours. Only half of the pool is filled. How long would each pipe take to fill the swimming pool.

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Exercise 3 14

1. The sum of a two digit number and the number formed by interchanging the digits is 110. If 10 is subtracted from the first number, the new number

is 4 more than 5 times the sums of the digits of the first number. Find the first number.

2. The sum of the numerator and denominator of a fraction is 12. If the denominator is increased by 3, the fraction becomes $\dfrac{1}{2}$. Find the fraction.

3. ABCD is a cyclic quadrilateral such that $\angle A = (4y + 20)°, \angle B = (3y - 5)°, \angle C = (4x)°$

and $\angle D = (7x + 5)°$. Find the four angles.

4. On selling a T.V. at 5% gain and a fridge at 10% gain, a shopkeeper gains Rs. 2000. But if he sells the T.V. at 10% gains and the fridge at 5% loss, he gains Rs. 1500 on the transaction. Find the actual price of the T.V. and the fridge.

5. Two numbers are in the ratio $5:6$. If 8 is subtracted from each of the numbers the ratio becomes $4:5$. Find the numbers.

6. 4 Indians and 4 Chinese can do a piece of work in 3 days. While 2 Indians and 5 Chinese can finish it in 4 days. How long would it take for 1 Indian to do it ? How long would it takes for 1 Chinese to do it ?

1. If $x^3 + 6x^2 + kx + 6$ is exactly divisible by $(x + 2)$, then $k = ?$

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2. The root of the polynomial equations 2x+3=0 is ....

A. $\dfrac{1}{3}$

B. $-\dfrac{1}{3}$

C. $-\dfrac{3}{2}$

D. $-\dfrac{2}{3}$

Answer: c

3. The type of the polynomial $4 - 3x^3$ is ....

    A. constant polynomial

    B. linear polynomial

    C. quadratic polynomial

    D. cubic polynomial

Answer: d

4. If $x^{51} + 51$ is divided by $x + 1$, then the remainder is

A. 0

B. 1

C. 49

D. 50

Answer: d

5. The zero of the polynomial $2x + 5$ is

A. $\dfrac{5}{2}$

B. $-\dfrac{5}{2}$

C. $\dfrac{2}{5}$

D. $-\dfrac{2}{5}$

Answer: b

6. The sum of the polynomials $p(x) = x^3 - x^2 - 2, q(x) = x^2 - 3x + 1$

A. $x^3 - 3x - 1$

B. $x^3 + 2x^2 - 1$

C. $x^3 - 2x^2 - 3x$

D. $x^3 - 2x^2 + 3x - 1$

Answer: a

7. Degree of the polynomial $(y^3 - 2)(y^3 + 1)$ is

....

A. 9

B. 2

C. 3

D. 6

Answer: d

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8. Let the polynomials be

(1) $-13q^5 + 4q^2 + 12q$ (2) $(x^2 + 4)(x^2 + 9)$

(3) $4q^8 - q^6 + q^2$ (4) $-\dfrac{5}{7}y^{12} + y^3 + y^5$

Then ascending order of their degree is

A. A,B,D,C

B. A,B,C,D

C. B,C,D,A

D. B,A,C,D

Answer: d

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9. If p(a) = 0 then (x-a) is a _____ of

p(x)

    A. divisor

    B. quotient

    C. remainder

    D. factor

Answer: d

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10. Zeros of (2-3x) is ....

A. 3

B. 2

C. $\dfrac{2}{3}$

D. $\dfrac{3}{2}$

Answer: c

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11. Which of the following has x-1 as a factor ?

A. 2x-1

B. 3x-3

C. 4x-3

D. 3x-4

Answer: b

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12. If x - 3 is a factor of p(x) , then the remainder is

A. 3

B. -3

C. p(3)

D. $p(-3)$

Answer: c

13. $(x + y)(x^2 - xy + y^2)$ is equal to

A. $(x + y)^3$

B. $(x - y)^3$

C. $x^3 + y^3$

D. $x^3 - y^3$

Answer: c

14. $(a + b - c)^2$ is equal to ....

A. $(a - b + c)^2$

B. $(-a - b + c)^2$

C. $(a + b + c)^2$

D. $(a - b - c)^2$

Answer: b

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15. In an expression $ax^2 + bx + c$ the sum and product of the factors respectively,

A. a,bc

B. b,ac

C. ac,b

D. bc,a

Answer: b

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16. If $(x + 5)$ and $(x - 3)$ are the factors of $ax^2 + bx + c$, then values of a,b and c are

A. 1,2,3

B. 1,2,15

C. 1,2,-15

D. 1,-2,15

Answer: c

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17. Cubic polynomial may have maximum of

_____ linear factors.

A. 1

B. 2

C. 3

D. 4

Answer: c

18. Degree of the constant polynomial is

_____

A. 3

B. 2

C. 1

D. 0

Answer: d

19. Find the value of m from equation

$2x + 3y = m.$ if its one solution is x=2 and y=-2

A. 2

B. -2

C. 10

D. 0

Answer: b

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20. Which of the following is a linear equations?

A. $x + \dfrac{1}{x} = 2$

B. $x(x - 1) = 2$

C. $3x + 5 = \dfrac{2}{3}$

D. $x^3 - x = 5$

Answer: c

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21. Which of the following is a solution of the equations $2x - y = 6$?

A. $(2,4)$

B. (4,2)

C. (3,-1)

D. (0,6)

Answer: b

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22. If (2,3) is a solutions of linear equations $2x + 3y = k$ then the value of k is ....

A. 12

B. 6

C. 0

D. 13

Answer: d

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23. Which condition does not satisfy the linear equations ax+by+c=0 ....

A. $a \neq 0, b = 0$

B. $a = 0, b \neq 0$

C. $a = 0, b = 0, c \neq 0$

D. $a \neq 0, b \neq 0$

Answer: c

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24. Which of the following is not a linear equation is

two variable

A. ax+by+c=0

B. $0x + 0y + c = 0$

C. $0x + by + c = 0$

D. $ax + 0y + c = 0$

Answer: b

25. The value of k for which the pair of linear equations $4x + 6y - 1 = 0$ and $2x + ky - 7 = 0$ represents parallel lines is
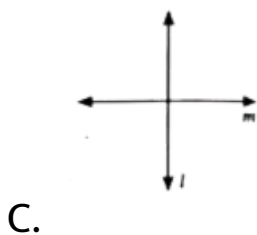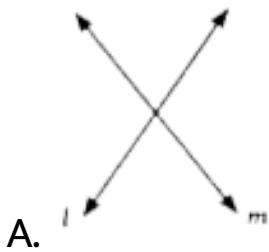
A. k=3

B. k=2

C. k=4

D. k=-3

Answer: a

26. A pair of linear equations has no solution then the graphical representation is

A.

B.

C.

Answer: b

27. If $\dfrac{a_1}{a_2} \neq \dfrac{b_1}{b_2}$ where $a_1x + b_1y + c_1 = 0$ and $a_2x + b_2y + c_2 = 0$ then the given pair of linear equation has _____ solution (s)

A. no solutions

B. two solutions

C. unique

D. infinite

Answer: c

28. If $\dfrac{a_1}{a_2} = \dfrac{b_1}{b_2} \ne \dfrac{c_1}{c_2}$ where $a_1 x + b_1 y + c_1 = 0$ and $a_2 x + b_2 y + c_2 = 0$ then the given pair of linear equation has _____ solution (s) .

A. no solutions

B. two solutions

C. infinite

D. unique

Answer: a

29. GCD of any two prime numbers is _____

A. -1

B. 0

C. 1

D. 2

Answer: c

30. The GCD of $x^4 - y^4$ and $x^2 - y^2$ is

A. $x^4 - y^4$

B. $x^2 - y^2$

C. $(x + y)^2$

D. $(x + y)^4$

Answer: b

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Textbook Activity

1. Find the value of k for the given system of linear equations satisfying the condition below

(i)$2x + ky = 1, 3x - 5y = 7$ has a unlque solutions

(ii) $kx + 3y = 3, 12x + ky = 6$ has no solutions

(iii) $(k - 3)x + 3y = k, kx + ky = 12$ has infinite number of solutions

2. Find the value of a and b for which the given system of linear equation has infinite number of

solutions

$$3x - (a + 1)y = 2b - 1, 5x + (1 - 2a)y = 3b$$

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Additional Questions

1. Which of the following is a monomial

A. $4x^2$

B. 3x + 1

C. $3x^2 + 2x + 1$

D. $4x^3 + 1$

Answer: A

2. Which of the following is trinomial

A. $-7z$

B. $z^2 - 4y^2$

C. $x^2y - xy^2 + y$

D. $12a - 9ab + 5b - 3$

Answer: C

3. The sum of $5x^2$, $7x^2$, $8x^2$, $11x^2$ and $9x^2$ is ....

4. The area of rectangle with length $2l^2m$ and breadth $3lm^2$ is ....

A. $6l^3m^3$

B. l^3m^3

C. $2l^3m^3$

D. $4l^3m^3$

Answer: A

5. The coefficient of x^2 and x in $2x^3 - 5x^2 + 6x - 3$

are respectively ....

    A. $2, \ -5$

    B. $2, 6$

    C. $-5, 6$

    D. $-5, \ -3$

Answer: C

6. In the system $6x - 2y = 3, kx - y = 2$ has a unique solution then ....

A. k=3

B. $k \neq 3$

C. $k = 4$

D. $k \neq 4$

Answer: B

7. A system of two linear equation in two variables is inconsistent.If their graphs ....

    A. coincide

    B. interset only at a point

    C. do not intersect at any point

    D. cut the x-axis

Answer: C

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8. The system of equation

$x - 4y = 8, 3x - 12y = 24.\ldots\ldots\ldots\ldots\ldots$

A. has inifinitely many solution

B. has no solution

C. has a unique solution

D. may or may not have a solution

Answer: A

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9. The solution set of $x - ay = 4$ and $x + y = 0$ is

(1,-1) the value of a is ....

   A. -1

   B. 1

   C. -3

   D. 3

Answer: D

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10. The solution set of $x + y = 7, x - y = 3$ is

....

A. $(-5, -2)$

B. $(-5, 2)$

C. $(5, 2)$

D. $(2, 5)$

Answer: C

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11. What must be added to $x^4 - 3x^2 + 2x + 6$ to get $x^4 - 2x^3 - x + 8$?

12. What must be subtracted from $y^4 + 2y^3 - 3y + 8$ to get $y^4 - 2y^3 + 6$?

13. The area of a rectangle is $x^4 + 9x^2 + 20$ sq.units and its length is $x^2 + 4$ units. Find its breadth in

term of x.

14. Solve $3x + 4y = 24, 20x - 11y = 47$ using cross multiplication method.

15. A fraction such that if the numerator is multiplied by 3 and the denominator is reduced by 3 we get $\dfrac{8}{11}$ but if the numerator is increased by 8

and the denominator is doubled we get $\frac{2}{5}$.Find the fraction.

16. One number is greater than the thrice the other number by 2. If 4 j times the smaller number exceeds the greater by 5. find the number.

17. The cost of 11 pencil and 3 erasers is rupees 50 and the cost of 8 pencils and 3 erasers is rupees 38

Find the cost of pencils and erasers.

Assignment Fill In The Blanks

1. The coefficient of $-5x$ is ....

2. $7x + 5y + 3$ has .... Terms

3. An expression having only two terms is called a

....

4. The degree of polynomial $5x^2y + 3x^3y^2 + 3xy + 7$ is ....

5. The sum of $7x^2 - 4x + 5$ and $9x - 10$ is ....

1. If the system $6x - 2y = 3, kx - y = 2$ has unique solutions then..................

    A. k=3

    B. $k \neq 3$

    C. $k = 4$

    D. $k \neq 4$

Answer: b

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2. A system of two linear equation in two variable is inconsistent, if their graphs ....

A. coincide

B. intersect only at a point

C. do not intersect at any point

D. cut the x-axis

Answer: c

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3. The system of equation

$x - 4y = 8, 3x - 12y = 24$ ....

A. has inifinitely many solution

B. has no solution

C. has a unique solution

D. many or may not have a solution

Answer: a

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4. Find the value of a from the equation $5x - 3y = a$ if its one solution is $x = 2$ and y=-3

....

A. -19

B. 19

C. 20

D. -20

Answer: b

5. Which of the following is a linear equations?

A. $x - \dfrac{1}{x} = 5.$

B. $3x(x - 3) = 5$

C. $5x + 7 = \dfrac{1}{3}$

D. $x^2 - 5x = 5$

Answer: c

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6. The value of k for which the pair of linear

equations

$7x + 3y - 5 = 0$ and $14x + ky - 2 = 0$ represent

parallel line is ....

A. $k = 4$

B. $k = 7$

C. $k = -6$

D. $k = 6$

Answer: d

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7. If $\dfrac{a_1}{a_2} = \dfrac{b_1}{b_2} = \dfrac{C_1}{c_2}$ where

$a_1 x + b_1 y + c_1 = 0$ and $a_2 x + b_2 y + c_2 = 0$,

then the given pair of linear equation has .... solutions

    A. no solutions

    B. two solutions

    C. infinite number

    D. a unique

Answer: c

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8. Find the quotient and the remainder when $5x^5 - 13x^4 - 15x^2 - 20$ is divided by x-3

9. Twice the area of a right angled triangle $15x^2 + 19x + 6.$ squnits.If its altitude is 5x+3 units find its base in terms of x.

10. Find the total saving of a boy who saves rupes (4x-6y) rupes (6x+2y) , rupes (4y-x) and rupes (y-2x) for four consecutive days.

11. Simplify $3y(2y-7)-3(y-4)-63$ and evaluate when y=-2

12. Draw the graph of the equations

x-y+ 1 =0 and 3x +2y -12=0.

Determine the coordinates of the vertices of the triangle formed by the lines and the x-axis and shade the triangular region.

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13. A fraction becomes $\dfrac{9}{11}$, if 2 is added to both the numerator and the denominator if 3 is added to both the numerator and the denominator it becomes $\dfrac{5}{6}$, Find the fraction.

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14. The sum of the digits of a two-digits number is 9. Also nine times this number is twice the number obtained by reserving the order of the digits. Find the number.Solve by cross multiplication method.

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15. A part of monthly hostel charges is fixed and the remaining depends on the number of days one has taken food in the mess. When a student A takes food for 20 days she has to pay rupees 1,000 as

hostel charges whereas a student B, Who takes food for 26 days pays rupees 1,180 as hostel charges find the fixed charges and the cost of food per day.

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16. solve for x and y .

$$\frac{5}{x-1} + \frac{1}{y-2} = 2 \text{ and } \frac{6}{x-1} - \frac{3}{y-2} = 1$$

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Assignment Answer The Following Questions

1. Subtract $5x^2 - 4y^2 + 6y - 3$ from

$7x^2 - 4xy + 5y^2 + 5x - 3y$