



ST. LAWRENCE HIGH SCHOOL



A JESUIT CHRISTIAN MINORITY INSTITUTION

CLASS 8

SUBJECT : Algebra and Geometry

Work sheet 15 answer key

Marks:15

Factorisation (Splitting of middle terms)

Date:23.4.2020

Answer all the following questions(1×15=15)

1. The area of a rectangle is $x^2+9x+14$. What are the dimensions if $x=2$?

(A)14 and 2

(B) 18 and 2

(C)9 and 4

(D) 6 and 6

Solution: C, $(X+7)(X+2)$

2. Factorise $3x^2-5x+2$

(A) $(3x-2)(x-1)$

(B) $(x+2)(3x-1)$

(C) $(3x+2)(x-1)$

(D) $(x-2)(3x+1)$

Solution: A

3. Factorize by splitting the middle term: $x^2+9x-22$

(A) $(x+11)(x-2)$

(B) $-(x+11)(x-2)$

(C) $(x-11)(x-2)$

(D) $(x+11)(x+2)$

Solution: A

4. Factorise by splitting the middle term $2x^2-11x+12$

(A) $(2x+3)(x+4)$

(B) $(x+3)(2x-4)$

(C) $(x-3)(2x-4)$

(D) $(2x-3)(x-4)$

Solution: D

5. The volume of cuboid is given by the expression $x^3 + 2x^2 - x - 2$. The dimension of the cuboid for $x = 5$ is:

(A) $4 \times 6 \times 7$

(B) $2 \times 3 \times 4$

(C) $5 \times 6 \times 7$

(D) $6 \times 7 \times 8$

Solution: A, $(X+1)(x-1)(X+2)$

6. The second degree factors of $x^4 - 5x^2 - 24$ are

(A) $(x^2 - 8)(x^2 + 3)$

(B) $-(x^2 - 8)(x^2 + 3)$

(C) $(x^2 - 8)(x^2 - 3)$

(D) $(x^2 + 8)(x^2 + 3)$

Solution: A

7. What are the two factors of quadratic polynomial $x^2 - 16x + 64$?

(A) $(x-16)$ and $(x-64)$

(B) $(x+8)$ and $(x-8)$

(C) $(x+16)$ and $(x-4)$

(D) $(x-8)$ and $(x-8)$

Solution: D

8. Factorise the quadratic polynomial by splitting the middle term:

$x^2 + 14x + 45$

(A) $(x+9)(x+5)$

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

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

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

Solution: A

9. Factorise the quadratic polynomial by splitting the middle term: $y^2 - 4y - 21$

(A) $(y - 7)(y - 3)$

(B) $(y - 7)(y + 3)$

(C) $(y + 7)(y - 3)$

(D) $(y + 7)(y + 3)$

Solution: B

10. What is the value of p if $x - 2$ is a factor of $x^2 - 6x + p$?

(A) 4

(B) -4

(C) 8

(D) -8

Solution: C

11. The factors of $2p^2 - 11p + 12$ are

(A) $(p + 4)(2p - 3)$

(B) $(p - 4)(2p - 3)$

(C) $(p - 4)(2p + 3)$

(D) $(p - 3)(2p - 4)$

Solution: B

12. The factors of $6x^3 - 7x^2 - 5x$ are

(A) $x(3x - 5)(2x + 1)$

(B) $(3x - 5)(2x + 1)$

(C) $x(3x + 5)(2x + 1)$

(D) $x(3x - 5)(2x - 1)$

Solution: A

13. Which value of 'a' would make $x^2 - ax - 92$ factorable?

(A) 24

(B) 18

(C) 19

(D) 26

Solution: C

14. $x-1$ is a factor of which of the following?

(A) $x^2 - 2x+1$

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

(C) $x^2 + 2x+1$

(D) $x^2 + 2x-1$

Solution: A, $(X-1)(X-1)$

15. $-4x^2-5x+6$ is equal to?

(A) $-(4x-3)(x+2)$

(B) $(4x-3)(x+2)$

(C) $-(4x+3)(x+2)$

(D) $-(4x-3)(x-2)$

Solution: A

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