POLYNOMIALS

MCQs & A and R WORK SHEET

Test / Exam Name: Polynomials **Standard: 10th** **Subject: Mathematics**

Student Name: ..... **Section:** ..... **Roll No.:** .....

Questions: 35 **Time: 01:00 hh:mm** **Negative Marks: 0** **Marks: 35**

Instructions

1. MULTIPLE CHOICE QUESTIONS.

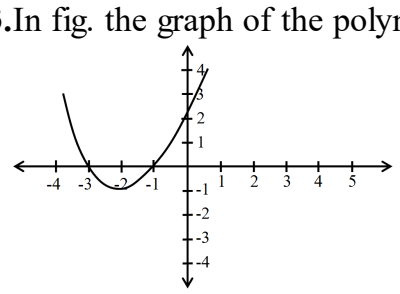
Q1. A polynomial of degree ..... is called a quadratic polynomial: **1 Mark**

A 1 **B** 3 **C** 0 **D** 2

Q2. If α and β are the zeroes of a quadratic polynomial $ax^2 + bx + c$, then $\alpha + \beta =$ **1 Mark**

A $\frac{c}{a}$ **B** $\frac{b}{a}$ **C** $\frac{-b}{a}$ **D** $\frac{-c}{a}$

Q3. In fig. the graph of the polynomial p(x) is given. The number of zeroes of the polynomial is: **1 Mark**



A 1 **B** 2 **C** 3 **D** 0

Q4. If α and β are zeros of $x^2 + 5x + 8$, then the value of $(\alpha + \beta)$ is: **1 Mark**

A 8 **B** 5 **C** -5 **D** -8

Q5. If α and β are the zeroes of the polynomial $2x^2 + 5x + 1$, then the value of $\alpha + \beta + \alpha\beta$ is: **1 Mark**

A -2 **B** 1 **C** -1 **D** 3

Q6. If α and β are the zeroes of the polynomial $3x^2 + 11x - 4$, then the value of $\alpha^2 + \beta^2$ is: **1 Mark**

A $\frac{145}{9}$ **B** $\frac{150}{9}$ **C** $\frac{152}{9}$ **D** $\frac{144}{9}$

Q7. If α and β are the zeroes of the polynomial ax2 + bx + c, then the values of $\frac{\alpha}{\beta} + \frac{\beta}{\alpha}$ is: **1 Mark**

A $\frac{b^2}{ac}$ **B** $\frac{c^2}{ab}$ **C** $\frac{b^2-2ac}{ac}$ **D** $\frac{a^2}{bc}$

Q8. if α and β are the zeroes of the polynomial $3x^2 + 11x - 4$, then the value of $\frac{1}{\alpha} + \frac{1}{\beta}$ is: **1 Mark**

A $\frac{11}{4}$ **B** $\frac{12}{4}$ **C** $\frac{13}{4}$ **D** $\frac{15}{4}$

Q9. If the zeroes of the quadratic polynomial $x^2 + (a + 1)x + b$ are 2 and -3, then: **1 Mark**

A a = 2, b = –6 **B** a = -7, b = -1 **C** a = 0, b = -6 **D** a = 5, b = -1

Q10. If α, β are the zeros of polynomial $f(x) = x^2 - p(x + 1) - c$, then $(\alpha + 1)(\beta + 1) =$ **1 Mark**

A c - 1 **B** 1 - c **C** c **D** 1 + c

Q11. If one zero of the quadratic polynomial $x^2 + 3x + k$ is 2, then the value of 'k' is: **1 Mark**

A 10 **B** -5 **C** -10 **D** 5

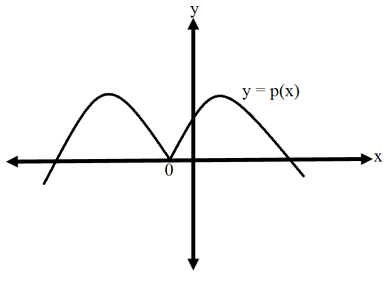
Q12. The zeroes of the quadratic polynomial $x^2 + 99x + 127$ are: **1 Mark**

A Both equal **B** Both positive **C** One positive and one negative
D Both negative

Q13. The zeroes of a polynomial $x^2 - 7x + 12$ are: **1 Mark**

A One positive and one negative **B** Both equal **C** Both positive
D Both negative

Q14. The number of zeroes for a polynomial p(x) where graph of y = p(x) is given in Figure, is: **1 Mark**



A 3 **B** 4 **C** 0 **D** 5

Q15. A real number k is said to be a zero of a polynomial p(x), if p(k) = **1 Mark**

A 2 **B** 3 **C** 1 **D** 0

Q16. The number of zeroes of a cubic polynomial is: **1 Mark**

A At most 3 **B** At least 3 **C** 2 **D** 3

Q17. A quadratic polynomial whose product and sum of zeroes are $\frac{1}{3}$ and $\sqrt{2}$ respectively is: **1 Mark**

A $3x^2 + x - 3\sqrt{2}x$ **B** $3x^2 - x + 3\sqrt{2}x$ **C** $3x^2 + 3\sqrt{2}x + 1$ **D** $3x^2 - 3\sqrt{2}x + 1$

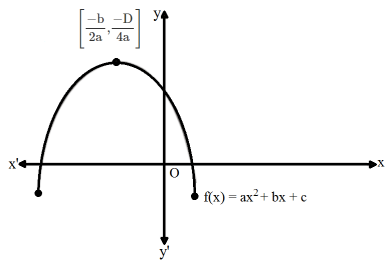
Q18. If α and β are the zeroes of a quadratic polynomial x^2 - 5x + b and $\alpha - \beta = 1$ then the value of b is: **1 Mark**

A -5 **B** 5 **C** 6 **D** -6

Q19. If one zero of the polynomial p(x) = (k + 4) x^2 + 13x + 3k is reciprocal of the other, then the value of k is: **1 Mark**

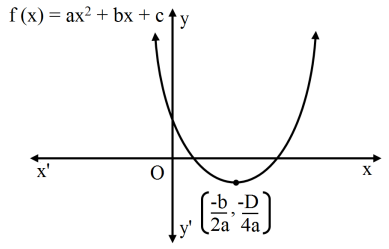
A 5 **B** 2 **C** 3 **D** 4

Q20. Fig. show the graph of the polynomial f(x) = ax^2 + bx + c for which: **1 Mark**



A a < 0, b > 0 and c > 0 **B** a < 0, b < 0 and c > 0 **C** a < 0, b < 0 and c < 0 **D** a > 0, b > 0 and c < 0

Q21. Figure show the graph of the polynomial f(x) = ax^2 + bx + c for which: **1 Mark**



A A < 0, b < 0 and c < 0 **B** A > 0, b < 0 and c > 0 **C** A < 0, b > 0 and c > 0 **D** A > 0, b > 0 and c < 0

Q22. If α, β are the zeros of the polynomial f(x) = x^2 - p(x + 1) - c such that $(\alpha + 1)(\beta + 1) = 0$, then c = **1 Mark**

A 1 **B** 0 **C** -1 **D** 2

Q23. The zeroes of the polynomial x^2 – 3x – m (m + 3) are: **1 Mark**

A m, m + 3 **B** –m, m + 3 **C** m, – (m + 3) **D** –m, – (m + 3)

Q24. The number of polynomials having zeroes -2 and 5 is: **1 Mark**

A 1 **B** 2 **C** 3 **D** More than 3

Q25. Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: The graph of a quadratic polynomial P(x) intersects the x - axis at two points.

Reason: The graph of a quadratic polynomial is a parabola.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false. **D** Assertion (A) is false but reason (R) is true.

Q26. Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: Degree of the polynomial $5x^2 + 3x + 4$ is 2.

Reason: The degree of a polynomial of one variable is the highest value of the exponent of the variable.

A Both Assertion and Reason are correct and Reason is the correct explanation for Assertio

B Both Assertion and Reason are correct, but Reason is not the correct explanation for Assertion

C Assertion is correct but Reason is incorrect **D** Assertion is incorrect but Reason is correct

Q27. Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: $(a^2 - b^2) = (a - b)(a + b)$.

Reason: $(5^2 - 4^2) = 9$

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false. **D** Assertion (A) is false but reason (R) is true.

Q28. Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: x^3+x has only one real zero.

Reason: A polynomial of nth degree must have n real zeroes.true.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is

Q29. Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: $x^2 + 4x + 5$ has two zeroes.

Reason: A quadratic polynomial can have at the most two zeroes.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

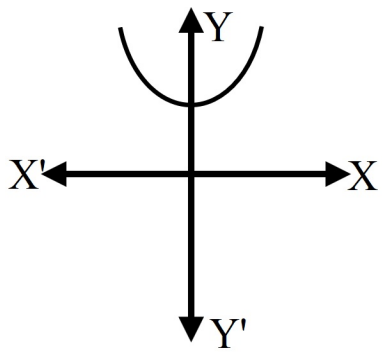
C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q30.Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: The graph of y = f(x) is given, number of zeroes of f(x) = 0.

Reason: Graph y = f(x) does not intersect x - axis.



1. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
2. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
3. Assertion (A) is true but reason (R) is false.
4. Assertion (A) is false but reason (R) is true.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q31.Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: A quadratic polynomial, sum of whose zeroes is 8 and their product is 12 is $x^2 - 20x + 96$.

Reason: If α and β be the zeroes of the polynomial f(x), then polynomial is given by

$f(x) = x^2 - (\alpha + \beta)x + \alpha\beta$.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q32.Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: If the sum of the zeroes of the quadratic polynomial $x^2 - 2kx + 8$ is 2 then value of k is 1.

Reason: Sum of zeroes of a quadratic polynomial $ax^2 + bx + c$ is $\frac{-b}{a}$.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q33.Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: -1 & -4 are the zeroes of polynomial $x^2 - 3x - 4$.

Reason: A real number k is said to be a zero of polynomial P(x) if P(K) = 0.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q34.Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: $3 - 2\sqrt{5}$ is one zero of the quadratic polynomial then other zero willbe $3 + 2\sqrt{5}$.

Reason: Irrational zeros (roots) always occurs in pairs.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

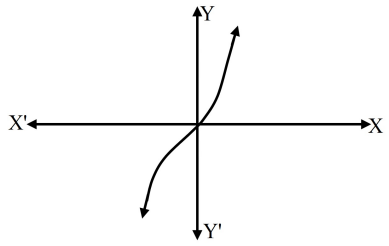
C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Q35.Directions: In the following questions, the Assertions (A) and Reason(s) (R) have been put forward. Read both the statements carefully and choose the correct alternative from the following: **1 Mark**

Assertion: The graph of y =f(x) is given below. Number of zeroes of F(x) = 1.

Reason: Graph of y = f(x) intersect x - axis in one point only.



1. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
2. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
3. Assertion (A) is true but reason (R) is false.
4. Assertion (A) is false but reason (R) is true.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.