



Attempt questions first; check the separate key afterward. Show all working. Draw accurate figures where required.

A. Very short answers - 1 mark each

1. Find the degree of $5x-3$.
2. Is 7 a linear polynomial?
3. Find $p(2)$ for $p(x)=3x+5$.
4. Find $p(-3)$ for $p(x)=2x-1$.
5. Find the zero of $4x-12$.
6. Find the zero of $5-2x$.
7. Is $x=-2$ a zero of $3x+6$?
8. Is $x=1$ a zero of $7x-5$?

B. Short answers / practice - 2 marks each

9. Find a if $x=3$ is a zero of $ax-12$.
10. Find b if $x=-4$ is a zero of $2x+b$.
11. Add $3x-2$ and $5x+7$.
12. Subtract $4x-9$ from $7x+1$.
13. Find a linear polynomial with zero 5.
14. Find one with zero -3 and coefficient of x equal to 2.
15. How many zeros can a nonzero linear polynomial have?
16. Explain why the zero polynomial is different.
17. For $p(x)=ax+b$ with $a \neq 0$, express its zero.
18. What happens to the zero when p is multiplied by nonzero k ?
19. A taxi fare is ₹30+₹12 per km. Write a polynomial in distance x .
20. Evaluate it at $x=8$.

C. Application / reasoning - 3 marks each

21. Find $p(0)$, $p(1)$, $p(2)$ for $p(x)=2x-4$.
22. Plot these points and identify the x -intercept.
23. Find a if $p(x)=ax+5$ and $p(2)=13$.
24. Find $p(-1)$ for that polynomial.
25. Is $1/x+2$ a polynomial in x ? Explain.
26. Is $\sqrt{2}x+1$ a polynomial in x ?
27. Find the zero of $7x+21$.
28. If $p(x)=ax-4$ and $p(3)=11$, find a .
29. Find $p(-2)$ for $p(x)=5-3x$.
30. Can two different linear polynomials have the same zero? Give examples.
31. A linear polynomial has $p(1)=4$ and $p(4)=13$. Find it and its zero.

D. Extended practice - 5 marks per pair

32. A linear polynomial has $p(0)=-6$ and $p(2)=4$. Find it.
33. Find its zero.
34. A rectangle has fixed length 8 cm and width x cm. Express its perimeter as a polynomial.
35. If its perimeter is 30 cm, find x and area.

ANSWER KEY - Numerical / closed questions

- 1) 1. 2) No; nonzero constant has degree 0. 3) 11. 4) -7 . 5) 3. 6) $5/2$. 7) Yes. 8) No. 9) 4. 10) 8. 11) $8x+5$. 12) $3x+10$. 13) Example: $x-5$. 14) $2x+6$. 15) One. 16) Every real number is a zero; degree undefined. 17) $-b/a$. 18) Unchanged. 19) $12x+30$. 20) ₹126. 21) $-4, -2, 0$. 22) $(2, 0)$. 23) 4. 24) 1. 25) No. 26) Yes; $\sqrt{2}$ is a constant coefficient. 27) -3 . 28) 5. 29) 11. 30) Yes; $x-2$ and $3x-6$. 31) $3x+1; -1/3$. 32) $5x-6$. 33) $6/5$. 34) $2x+16$ cm. 35) 7 cm; 56 cm^2 .