Term 3 Review Part 4

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Mathematics 9
Term 3 Review Part 4

A. POLYNOMIALS

Simplify the following and state the degree of the polynomial.

1. $4y + 3y - 6x - 2y$

$= -2x + y$

1st degree

2. $4a - 3ab + 6ab - 5ab + 6a - 6ab$

$= 10a - 8ab$

$= 2nd\ degree.$

3. $(-4m^4 + 14 + 3m^2) + (-3m^4 - 14m^2 - 8)$

$= -7m^4 - 11m^2 + 6$

$= 4th\ degree$

4. $(7h^2 + 2h^4) - (9h^2 - 5h^3) + (4h^3 + 6h^4)$

$= -2h^2 + 8h^4 + 9h^3$

$= 8h^4 + 9h^3 - 2h^2$

$= 4th\ degree$

Evaluate the following if $x = 3$ and $y = 2$.

5. $-2x^2 - 3y^2 + 3x^2 + 4y^2$

$= x^2 + y^2$

$= (3)^2 + (2)^2$

$= 9 + 4$

$= 13$

6. $(3x - 2y + 3) - (4y - 1 + 5x) - (x - 3 + 2y)$

$= -3x - 8y + 7$

$= -3(3) - 8(2) + 7$

$= -9 - 16 + 7$

$= -18$

Multiply the following.

7. $(-5m^2)(4m^3)$

$= -20m^{2+3}$

$= \boxed{-20m^5}$

8. $(3x^2y)(2x)(4xy)$

$= 24x^{2+1+1}y^{1+1}$

$= \boxed{24x^4y^2}$

9. $-3(3x-2y+4)$

$= \boxed{-9x+6y-12}$

10. $(6a-5b+c)2a$

$= 12a^{1+1} - 10ab + 2ac.$

$= \boxed{12a^2 - 10ab + 2ac.}$

11. $-5mn^2(3m^2-4mn+6m)$

$= -15m^{1+2}n^2 + 20m^{1+1}n^{2+1} - 30m^{1+1}n^2$

$= \boxed{-15m^3n^2 + 20m^2n^3 - 30m^2n^2}$

12. $(y+4)(y-6)$

$= y^2 - 6y + 4y - 24$

$= \boxed{y^2 - 2y - 24}$

13. $(2a+3)(3a-4)$

$= 6a^2 - 8a + 9a - 12$

$= \boxed{6a^2 + a - 12}$

14. $(3a^2+2b)(2a^2-3b)$

$= 6a^4 - 9a^2b + 4a^2b - 6b^2$

$= \boxed{6a^4 - 5a^2b - 6b^2}$

Divide the following.

15. $\frac{20x^4}{-5x^2}$

$= -4x^{4-2}$

$= \boxed{-4x^2}$

16. $\frac{-35x^7y^3z^4}{-5x^3yz^2}$

$= 7x^{7-3}y^{3-1}z^{4-2}$

$= \boxed{7x^4y^2z^2}$

17. $\frac{10m^2+15m}{5}$

$\frac{10m^2}{5} + \frac{15m}{5}$

$= \boxed{2m^2 + 3m}$

18. $\frac{4m^8n^6+8m^4n^5-6m^3n^2}{2m^3n^2}$

$\frac{4m^8n^6}{2m^3n^2} + \frac{8m^4n^5}{2m^3n^2} - \frac{6m^3n^2}{2m^3n^2}$

$= 2m^5n^4 + 4mn^3 - 3m^0n^0$

$= \boxed{2m^5n^4 + 4mn^3 - 3}$

Assignment : Term 3 Review Part 4 Assignment

Name:_____

Term 3 Review Part 4 Assignment

A. Simplify the following.

1. $4x + 3y - 6x - 2y$

2. $4a - 3ab + 6abc - 5ab + 6a - 6abc$

3. $\left(4n + n^2 - 3\right) - \left(2 + 6n - 3n^2\right)$

4. $(5a + 4) - (5a + 3)$

5. $9c^3 + 5c^2 + 11c - 2c^3 + 9c - 8c^2$

6. $\left(k^4 - 3 - 3k^3\right) - \left(5k^4 - 6k^3 + 8k^5\right)$

B. Evaluate the following if $x = 2$.

7. $x + 3 - 5x - 2 + 3x + 1$

8. $2x^2 - 5x - 7 - x^2 + 2x + 2$

9. $x^3 + 2x^2 - 3x + 2x^3 - x + 2x^2$

10. $(3x + 4) - (2x + 6) + (x - 1)$

11. $(2x^2 + 6x - 1) - (3x^2 + 2x - 4)$

12. $(-2x^3 + 4 + 3x) - (4x^2 + x^3 + 4)$

C. Multiply the following polynomials.

13. $(-4x^3)(5x)$

14. $(-7a^2)(-3a^3)$

15. $\left(\frac{2}{3}x^4y\right)\left(\frac{9}{2}xy^2z\right)$

16. $(6m^2np)(-4m^4np^3)$

17. $5(2a-4)$

18. $-3(3a-2b+4c)$

19. $3ab(2a^2-4ab+5)$

20. $(5mn-4n+3)(2m^2n)$

21. $(m-9)(m+9)$

22. $(a-7)(a-4)$

23. $(x-5)(2x+5)$

24. $(2a+3)(3a-4)$

25. $(3x-1)(x+8)$

26. $(3m+2)(3m-2)$

D. Divide the following.

27. $\frac{6x-18}{3}$

28. $\frac{10m^2+15m}{5}$

29. $\frac{-2a^3+2a^2+8a}{2a}$

30. $\frac{-10y^6-15y^4+25y^2}{-5y^2}$

31. $\frac{24a^4b^5-18a^3b^4+12a^2b^3}{6a^2b^2}$

32. $\frac{-27x^5y+18x^4y-9x^3y}{-9x^3y}$

Answers

A. 1) $-2x+y$ 2) $10a-8ab$

3) $4n^2-2n-5$ 4) 1

5) $7c^3-3c^2+20c$ 6) $-8k^5-4k^4+3k^3-3$

B. 7) 0 8) -7

9) 32 10) 1

11) 7 12) -34

C. 13) $-20x^4$ 14) $21a^5$

15) $3x^5y^3z$ 16) $-24m^6n^2p^4$

17) $10a-20$ 18) $-9a+6b-12c$

19) $6a^3b-12a^2b^2+15ab$ 20) $10m^3n^2-8m^2n^2+6m^2n$

21) m^2-81 22) $a^2-11a+28$

23) $2x^2-5x-25$ 24) $6a^2+a-12$

25) $3x^2+23x-8$ 26) $9m^2-4$

D. 27) $2x-6$ 28) $2m^2+3m$

29) $-a^2+a+4$ 30) $2y^4+3y^2-5$

31) $4a^2b^3-3ab^2+2b$ 32) $3x^2-2x+1$