Elementary Algebra Skill

Performing Operations on Polynomials

Perform the indicated operation(s).

1) $\left(3v^4 - 2 + 8v^2\right) + \left(6v^2 + 4 - 7v^4\right)$

2) $\left(4v^2 - 5 - v^3\right) - \left(3 - 6v^3 - 3v^2\right)$

3) $\left(2x^4 + x\right) + \left(7x - 2x^2\right) - \left(4x - 6x^4 + 5x^2\right)$

4) $3x\left(x^2 - 7x + 2\right)$

5) $\left(6n + 5\right)\left(3n - 5\right)$

6) $\left(8a - 2\right)\left(3a^2 + 2a - 2\right)$

7) $\left(3a + 2b\right)\left(8a + 8b\right)$

8) $\left(8m^2 - 2mn - 7n^2\right)\left(6m + 3n\right)$

9) $\left(8b - 7\right)\left(8b + 7\right)$

10) $\left(2y + x\right)\left(2y - x\right)$

11) $\left(5p - 3\right)^2$

12) $\left(6x + y\right)^2$

13) $\left(5k^5 + 5k^4 + 40k^3\right) \div 10k^2$

14) $\dfrac{3k^3m^2 + 3k^2m^3 + 2km}{8km}$

15) $\left(m^2 - m - 80\right) \div \left(m - 9\right)$

16) $\left(n^3 + 10n^2 + 29n + 60\right) \div \left(n + 7\right)$

17) $\left(8v^2 - v - 4\right) \div \left(8v - 9\right)$

18) $\left(2a^2 + 13a + 21\right) \div \left(2a + 7\right)$

Answers to Performing Operations on Polynomials

1) $-4v^4 + 14v^2 + 2$ 2) $5v^3 + 7v^2 - 8$ 3) $8x^4 - 7x^2 + 4x$ 4) $3x^3 - 21x^2 + 6x$

5) $18n^2 - 15n - 25$ 6) $24a^3 + 10a^2 - 20a + 4$ 7) $24a^2 + 40ab + 16b^2$

8) $48m^3 + 12m^2n - 48mn^2 - 21n^3$ 9) $64b^2 - 49$ 10) $4y^2 - x^2$

11) $25p^2 - 30p + 9$ 12) $36x^2 + 12xy + y^2$

13) $\dfrac{k^3}{2} + \dfrac{k^2}{2} + 4k$

14) $\dfrac{3k^2m}{8} + \dfrac{3km^2}{8} + \dfrac{1}{4}$ 15) $m + 8 - \dfrac{8}{m-9}$ 16) $n^2 + 3n + 8 + \dfrac{4}{n+7}$

17) $v + 1 + \dfrac{5}{8v-9}$ 18) $a + 3$