Name : _____

Factoring Polynomials - Synthetic Division

Apply synthetic division method to factorize each polynomial.

1) $6x^3 + 47x^2 + 36x + 7$

2) $9a^4 - 9a^3 - 70a^2 + 16a + 96$

3) $16b^5 + 48b^4 - 9b^3 -$

5) $y^4 - 10y^2 + 9$ - 1

1) Determine whether r – 4 is a factor of $-2r^5 + 6r^4 + 10r^3 - 6r^2 - 9r + 4$.

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Answer key

Factoring Polynomials - Synthetic Division

Apply synthetic division method to factorize each polynomial.

1) $6x^3 + 47x^2 + 36x + 7$

$(x + 7)(2x + 1)(3x + 1)$

2) $9a^4 - 9a^3 - 70a^2 + 16a + 96$

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

3) $16b^5 + 48b^4 - 9b^3 -$

$b^2(4b + 3)(4b - 3)(b$

5) $y^4 - 10y^2 + 9$

$(y - 1)(y + 1)(y - 3)(y + 3)$

$- 1$

$(m - 1)^3$

1) Determine whether r – 4 is a factor of $-2r^5 + 6r^4 + 10r^3 - 6r^2 - 9r + 4$.

Yes, r – 4 is a factor of $-2r^5 + 6r^4 + 10r^3 - 6r^2 - 9r + 4$.