Determine the remainder of a polynomial expression using long division.

1. $(4y^4 - 5y^2 - 8y + 3) \div (2y - 3)$

2. $(3x^4 - 2x^3 - 6x^2 + 19x - 10) \div (3x - 2)$

3. $(7x^4 - 5x^3 + 35x^2 - 46x + 15) \div (7x - 5)$

4. $(3a^4 - 2a^3 - 9a^2 + 12a - 4) \div (3a - 2)$

5. $(2x^4 - 3x^3 - x + 2) \div (2x + 1)$

6. $(3x^4 + 7x^3 - 7x + 2) \div (3x - 2)$

7. $(4c^4 - 17c^3 + 8c^2 + 23c - 10) \div (4c - 1)$

8. $(2a^4 - 9a^3 - 12a^2 + 29a + 30) \div (2a + 3)$

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Answer List

1. $2y^3 + 3y^2 + 2y - 1$

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

3. $x^3 + 5x - 3$

4. $a^3 - 3a + 2$

5. $x^3 - 2x^2 + x - 1, \ R = 3$

6. $x^3 + 3x^2 + 2x - 1$

7. $c^3 - 4c^2 + c + 6, \ R = -4$

8. $a^3 - 6a^2 + 3a + 10$