

Division of Polynomials

Worksheet Answers

Answers

1. a) $x - 4$ b) $x - 3$ c) $x + 3$ d) $x + 6$

2. a) $3x^2 - x$, remainder 2

b) $2x^3 + 3x - 2$, remainder 0

c) $5x^2 + 11x + 45$, remainder 186

d) $2x^2 - 9x + 29$, remainder -93

3. a) $x^2 + x + 1$ b) $2x^2 - x + 2$

c) $4x^2 + 5x - 5$, remainder -3 d) $3x^2 + x + 1$

4. a) $4x^2 + 3x + 2$, remainder $3x + 2$

b) $3x^2 - 2x + 1$, remainder $2x - 1$

5. a) $\frac{5x^3 + 2x^2 - x + 5}{x + 1} = 5x^2 - 3x + 2 + \frac{3}{x + 1}$,

$$5x^3 + 2x^2 - x + 5 = (x + 1)(5x^2 - 3x + 2) + 3$$

b)

$$\frac{2x^5 + 2x^4 + 5x^3 - 3x^2 - x}{2x^2 - 1}$$

$$= x^3 + x^2 + 3x - 1 + \frac{2x - 1}{2x^2 - 1}$$

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

$$= (2x^2 - 1)(x^3 + x^2 + 3x - 1) + 2x - 1$$

6. $3x - 2$