

Synthetic Division

Divide the polynomials using synthetic division.

1 $(x^3 - 2x^2 - 5x + 6) \div (x - 3)$

$$\begin{array}{r|rrrr} 3 & 1 & -2 & -5 & +6 \\ & \downarrow & & & \\ & 1 & 1 & -2 & 0 \end{array}$$

Ans: _____ $x^2 + x - 2$

2 $(x^4 - 5x^3 + 7x^2 - 34x - 1) \div (x - 5)$

Ans: _____

3 $(7x^3 + 4x + 8) \div (x + 2)$

4 $(x^3 + 5x^2 + 7x + 2) \div (x + 2)$

Ans: _____

Ans: _____

5 $(3x^2 + 7x - 20) \div (x + 5)$

6 $(7x^3 + 6x - 8) \div (x - 4)$

Ans: _____

Ans: _____

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

8 $(8x^2 - 5x + 6) \div (x - 2)$

Ans: _____

Ans: _____

Synthetic Division

Answers

1 $(x^3 - 2x^2 - 5x + 6) \div (x - 3)$

$$\begin{array}{r|rrrr} 3 & 1 & -2 & -5 & +6 \\ & \downarrow & & & \\ & 1 & 1 & -2 & 0 \end{array}$$

Ans: $x^2 + x - 2$

2 $(x^4 - 5x^3 + 7x^2 - 34x - 1) \div (x - 5)$

Ans: $x^3 + 7x + 1 + \frac{4}{x - 5}$

3 $(7x^3 + 4x + 8) \div (x + 2)$

Ans: $7x^2 - 14x + 32 - \frac{56}{x + 2}$

4 $(x^3 + 5x^2 + 7x + 2) \div (x + 2)$

Ans: $x^2 + 3x + 1$

5 $(3x^2 + 7x - 20) \div (x + 5)$

Ans: $3x - 8 + \frac{20}{x + 5}$

6 $(7x^3 + 6x - 8) \div (x - 4)$

Ans: $7x^2 + 28x + 118 + \frac{464}{x - 4}$

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

Ans: $3x^3 + 6x^2 + 7x + 14 + \frac{34}{x - 2}$

8 $(8x^2 - 5x + 6) \div (x - 2)$

Ans: $8x + 11 + \frac{28}{x - 2}$