Synthetic Division

Divide the polynomials by synthetic division method.

1) $(n^4 - n^3 - 5n - 1) \div (n + 5)$

2) $(u^3 + 3u^2 - 8u - 10) \div (u - 6)$

3) $(8b^2 - 2b - 7) \div (4b - 5)$

4) $(4x^4 + 12x^3 - 2x^2 - x + 20) \div (x + 3)$

5) $(3q^5 + 6q^4 - 3q^2 - 9) \div (q - 1)$

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

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

8) $(m^2 + 4m + 8) \div (m - 4)$

Synthetic Division

Answer key

Divide the polynomials by synthetic division method.

1) $(n^4 - n^3 - 5n - 1) \div (n + 5)$

$$n^3 - 6n^2 + 30n - 155 + \frac{774}{n + 5}$$

2) $(u^3 + 3u^2 - 8u - 10) \div (u - 6)$

$$u^2 + 9u + 46 + \frac{266}{u - 6}$$

3) $(8b^2 - 2b - 7) \div (4b - 5)$

$$2b + 2 + \frac{3}{4b - 5}$$

4) $(4x^4 + 12x^3 - 2x^2 - x + 20) \div (x + 3)$

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

5) $(3q^5 + 6q^4 - 3q^2 - 9) \div (q - 1)$

$$3q^4 + 9q^3 + 9q^2 + 6q + 6 - \frac{3}{q - 1}$$

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

$$5g^3 - 12g^2 + 23g - 52 + \frac{111}{g + 2}$$

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

$$2y^2 - 5y + 10 - \frac{34}{2y + 3}$$

8) $(m^2 + 4m + 8) \div (m - 4)$

$$m + 8 + \frac{40}{m - 4}$$