

Dividing Polynomials by Binomials

Using Synthetic Division

Use synthetic division to find the answer.

① $(x^3 + 6x^2 + 32) \div (x - 4)$

② $(t^2 + 6t - 27) \div (t + 9)$

③ $(6n^2 - 47n - 63) \div (6n + 7)$

④ $(p^2 - 6p + 8) \div (p - 2)$

⑤ $(w^3 - 13w - 12) \div (w + 1)$

⑥ $(m^3 + 7m^2 + 14m + 8) \div (m + 2)$

⑦ $(8n + n^3 - 5n^2 - 4) \div (-1 + n)$

⑧ $(x^2 + 10x + 25) \div (x + 5)$

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Using Synthetic Division

Answers

① $(x^3 + 6x^2 + 32) \div (x - 4)$

$$\underline{x^2 - 2x - 8}$$

② $(t^2 + 6t - 27) \div (t + 9)$

$$\underline{t - 3}$$

③ $(6n^2 - 47n - 63) \div (6n + 7)$

$$\underline{n - 9}$$

④ $(p^2 - 6p + 8) \div (p - 2)$

$$\underline{p - 4}$$

⑤ $(w^3 - 13w - 12) \div (w + 1)$

$$\underline{w^2 - w - 12}$$

⑥ $(m^3 + 7m^2 + 14m + 8) \div (m + 2)$

$$\underline{m^2 + 5m + 4}$$

⑦ $(8n + n^3 - 5n^2 - 4) \div (-1 + n)$

$$\underline{n^2 - 4n + 4}$$

⑧ $(x^2 + 10x + 25) \div (x + 5)$

$$\underline{x + 5}$$