



Synthetic Division

Name _____

Score _____

DP:14

Divide the polynomials by synthetic division method.

1) $(4t^2 - 2t + 5) \div (2t - 1)$

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

3) $(k^3 + 4k^2 + 6k + 1) \div (k - 4)$

4) $(8d^4 - 6d^3 - 9d^2 + 3d - 15) \div (d - 3)$

5) $(7z^2 + 6z + 8) \div (z + 7)$

6) $(3n^3 - 17n^2 + 11) \div (3n + 1)$

7) $(12w^4 + 21w^3 + w^2 - 30w + 28) \div (4w + 3)$

8) $(5p^2 + 13) \div (p + 5)$



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Answer key

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Divide the polynomials by synthetic division method.

1) $(4t^2 - 2t + 5) \div (2t - 1)$

$$2t + \frac{5}{2t - 1}$$

3) $(k^3 + 4k^2 + 6k + 1) \div (k - 4)$

$$k^2 + 8k + 38 + \frac{153}{k - 4}$$

5) $(7z^2 + 6z + 8) \div (z + 7)$

$$7z - 43 + \frac{309}{z + 7}$$

7) $(12w^4 + 21w^3 + w^2 - 30w + 28) \div (4w + 3)$

$$3w^3 + 3w^2 - 2w - 6 + \frac{46}{4w + 3}$$

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

$$2x^4 + 4x^3 + 7x^2 + 14x + 25 + \frac{52}{x - 2}$$

4) $(8d^4 - 6d^3 - 9d^2 + 3d - 15) \div (d - 3)$

$$8d^3 + 18d^2 + 45d + 138 + \frac{399}{d - 3}$$

6) $(3n^3 - 17n^2 + 11) \div (3n + 1)$

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

8) $(5p^2 + 13) \div (p + 5)$

$$5p - 25 + \frac{138}{p + 5}$$