



Synthetic Division

Name _____

Score _____

DP:13

Divide the polynomials by synthetic division method.

1) $(2y^3 + y^2 + 8y + 2) \div (2y + 1)$

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

3) $(7b^4 + 6b^3 - 2b^2 - b - 1) \div (b + 1)$

4) $(12m^4 - 13m^3 - 6m^2 + 5) \div (3m - 1)$

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

6) $(4x^3 - 11x^2 + 31) \div (4x + 5)$

7) $(4h^3 - 6h - 10) \div (h - 4)$

8) $(2n^4 + n^3 - 3n^2 - 5n + 6) \div (n - 2)$



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Answer key

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Divide the polynomials by synthetic division method.

1) $(2y^3 + y^2 + 8y + 2) \div (2y + 1)$

$$y^2 + 4 - \frac{2}{2y + 1}$$

3) $(7b^4 + 6b^3 - 2b^2 - b - 1) \div (b + 1)$

$$7b^3 - b^2 - b - \frac{1}{b + 1}$$

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

$$3k - 4 + \frac{11}{k + 3}$$

7) $(4h^3 - 6h - 10) \div (h - 4)$

$$4h^2 + 16h + 58 + \frac{222}{h - 4}$$

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

$$g + 2 + \frac{5}{g - 6}$$

4) $(12m^4 - 13m^3 - 6m^2 + 5) \div (3m - 1)$

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

6) $(4x^3 - 11x^2 + 31) \div (4x + 5)$

$$x^2 - 4x + 5 + \frac{6}{4x + 5}$$

8) $(2n^4 + n^3 - 3n^2 - 5n + 6) \div (n - 2)$

$$2n^3 + 5n^2 + 7n + 9 + \frac{24}{n - 2}$$