

Bellwork Hon Alg 2 Thursday, January 12, 2017

Find each quotient using Synthetic Division. Give remainders any way you wish.

1. $\frac{x^4 + 4x^3 + 2x^2 + x - 19}{x + 4}$

2. $\frac{4x^3 - x + 9}{x - 3}$

3. Is $x + 7$ a factor of $x^3 - 2x^2 + 10x - 21$?

4. Find just the remainder of this quotient.

$\frac{2x^3 + 5x^2 - 7x + 18}{x + 3}$

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ANSWERS

Find each quotient using Synthetic Division. Give remainders any way you wish.

1. $\frac{x^4 + 4x^3 + 2x^2 + x - 19}{x + 4} = x^3 + 2x - 7$
R = 9

$$\begin{array}{r|rrrrr} -4 & 1 & 4 & 2 & 1 & -19 \\ & & -4 & 0 & -8 & 28 \\ \hline & 1 & 0 & 2 & -7 & 9 \end{array}$$

2. $\frac{4x^3 - x + 9}{x - 3} = 4x^2 + 12x + 35$

$$\begin{array}{r|rrrr} 3 & 4 & 0 & -1 & 9 \\ & & 12 & 36 & 105 \\ \hline & 4 & 12 & 35 & 114 \end{array}$$

$+ \frac{114}{x-3}$

3. Is $x + 7$ a factor of $x^3 - 2x^2 + 10x - 21$?

$$\begin{array}{r|rrrr} -7 & 1 & -2 & 10 & -21 \\ & & -7 & 63 & -511 \\ \hline & 1 & -9 & 73 & -532 \end{array}$$

No, Remainder isn't zero

4. Find just the remainder of this quotient.

$\frac{2x^3 + 5x^2 - 7x + 18}{x + 3}$

$2(-3)^3 + 5(-3)^2 - 7(-3) + 18 = 30$

Remainder = 30