Bellwork Alg 2A Friday, April 28, 2017

1. Is $x-2$ a factor of $3x^3+x^2-20x+12$

Find each quotient. You can leave remainders any way your wish.

2. $\dfrac{10x^4+49x^3+49x^2-18x-63}{2x+7}$

3. $\dfrac{2x^3-9x^2+7}{x-8}$

4. $\dfrac{2x^4+8x^3-7x^2-20x+5}{2x^2-5}$

Bellwork Alg 2A Friday, April 28, 2017 Answers

1. Is $x-2$ a factor of $3x^3+x^2-20x+12$

Yes, $x-2$ is a factor because the remainder is zero

$$x-2 \;\overline{)\; 3x^3+x^2-20x+12}$$
$$3x^2+7x-6$$
$$-(3x^3-6x^2)$$
$$7x^2-20x$$
$$-(7x^2-14x)$$
$$-6x+12$$
$$-(-6x+12)$$
$$0$$

Find each quotient. You can leave remainders any way your wish.

2. $\dfrac{10x^4+49x^3+49x^2-18x-63}{2x+7}$

$$2x+7 \;\overline{)\; 10x^4+49x^3+49x^2-18x-63}$$
$$5x^3+7x^2-9$$
$$-(10x^4+35x^3)$$
$$14x^3+49x^2$$
$$-(14x^3+49x^2)$$
$$0 \quad 0 \quad -18x-63$$
$$-(-18x-63)$$
$$0$$

3. $\dfrac{2x^3-9x^2+7}{x-8}$

$$x-8 \;\overline{)\; 2x^3-9x^2+0x+7}$$
$$2x^2+7x+56 \quad R=455$$
$$-(2x^3-16x^2)$$
$$7x^2+0x$$
$$-(7x^2-56x)$$
$$56x+7$$
$$-(56x-448)$$
$$+455$$

4. $\dfrac{2x^4+8x^3-7x^2-20x+5}{2x^2-5}$

$$2x^2+0x-5 \;\overline{)\; 2x^4+8x^3-7x^2-20x+5}$$
$$x^2+4x-1$$
$$-(2x^4+0x^3-5x^2)$$
$$8x^3-2x^2-20x$$
$$-(8x^3+0x^2-20x)$$
$$-2x^2+0x+5$$
$$-(-2x^2+0x-5)$$

x^2+4x-1