Bellwork Alg 2 Friday, November 2, 2018

Find each quotient.

1. $3x^2 - 4\overline{)18x^4 - 33x^3 + 24x - 20}$

2. $2x^2 + x - 7\overline{)10x^6 + 5x^5 - 29x^4 + 3x^3 - 33x^2 - 6x + 42}$

3. Is $x - 6$ a factor of $2x^3 - 35x^2 + 99x + 234$? Explain your answer.

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Answers

Find each quotient.

1. $3x^2 - 4 \overline{)\, 18x^4 - 33x^3 + 24x - 20}$

$6x^2 - 11x + 8$

$3x^2 + 0x - 4 \overline{)\, 18x^4 - 33x^3 + 0x^2 + 24x - 20}$

$-(18x^4 + 0x^3 - 24x^2)$

$-33x^3 + 24x^2 + 24x$

$-(-33x^3 + 0x^2 + 44x)$

$24x^2 - 20x - 20$

$-(24x^2 + 0x - 32)$

$-20x + 12$

$6x^2 - 11x + 8 \quad R = -20x + 12$

2. $2x^2 + x - 7 \overline{)\, 10x^6 + 5x^5 - 29x^4 + 3x^3 - 33x^2 - 6x + 42}$

$5x^4 + 3x^2 - 6$

$-(10x^6 + 5x^5 - 35x^4)$

$6x^4 + 3x^3 - 33x^2$

$-(6x^4 + 3x^3 - 21x^2)$

$-12x^2 - 6x + 42$

$-(-12x^2 - 6x + 42)$

0

$5x^4 + 3x^2 - 6$

3. Is $x - 6$ a factor of $2x^3 - 35x^2 + 99x + 234$? Explain your answer.

$2x^2 - 23x - 39$

$x - 6 \overline{)\, 2x^3 - 35x^2 + 99x + 234}$

$-(2x^3 - 12x^2)$

$-23x^2 + 99x$

$-(-23x^2 + 138x)$

$-39x + 234$

$-(-39x + 234)$

0

Yes, $x-6$ is a factor because when dividing by $x-6$ the remainder is zero.