Bellwork Alg 2 Tuesday, December 17, 2019

1. Simplify. $\dfrac{9x^4 + 9x^3 - 504x^2}{15x^4 + 120x^3 - 735x^2 - 5880x}$

2. Find this difference. $\dfrac{8}{2x^4 + 8x^3 - 24x^2} - \dfrac{5}{4x^3 + 12x^2 - 40x}$

3. Simplify. $\dfrac{\dfrac{5}{9a^3b^2} - \dfrac{7}{12b^5}}{\dfrac{2}{8a^4} + \dfrac{3}{6ab^3}}$

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ANSWERS

1. Simplify. $\dfrac{9x^4 + 9x^3 - 504x^2}{15x^4 + 120x^3 - 735x^2 - 5880x}$

$9x^2(x^2 + x - 56)$

$9x^2(x+8)(x-7)$

-56: $+8$, -7; $+1$

$= \dfrac{9x^2(x+8)(x-7)}{15x(x+7)(x-7)(x+8)}$

$15x(x^3 + 8x^2 - 49x - 392)$

	x	$+8$
x^2	x^3	$+8x^2$
-49	$-49x$	-392

$15x(x^2 - 49)(x+8)$

$15x(x+7)(x-7)(x+8)$

$= \dfrac{3x}{5(x+7)}$

2. Find this difference. $\dfrac{8}{2x^4 + 8x^3 - 24x^2} - \dfrac{5}{4x^3 + 12x^2 - 40x}$

$2x^2(x^2 + 4x - 12)$ $\quad 4x(x^2 + 3x - 10)$

$2x^2(x+6)(x-2)$ $\quad 4x(x+5)(x-2)$

$\dfrac{2(x+5)}{2(x+5)} \cdot \dfrac{8}{2x^2(x+6)(x-2)} - \dfrac{5}{4x(x+5)(x-2)} \cdot \dfrac{x(x+6)}{x(x+6)}$

$\dfrac{16(x+5) - 5x(x+6)}{4x^2(x+6)(x-2)(x+5)} = \dfrac{16x + 80 - 5x^2 - 30x}{4x^2(x+6)(x-2)(x+5)}$

$= \dfrac{-5x^2 - 14x + 80}{4x^2(x+6)(x-2)(x+5)}$

3. Simplify. $\dfrac{\left(\frac{5}{9a^3b^2} - \frac{7}{12b^5}\right)}{\left(\frac{2}{8a^4} + \frac{3}{6ab^3}\right)} \cdot \dfrac{72a^4b^5}{72a^4b^5}$ LCM $= 72a^4b^5$

$= \dfrac{40ab^3 - 42a^4}{18b^5 + 36a^3b^2}$