Bellwork Alg 2 Wednesday, February 27, 2019

Simplify each sum or difference.

1. $\dfrac{3x}{8x^4 - 128x^2} - \dfrac{7}{12x^3 - 42x^2 - 24x}$

2. $\dfrac{8}{2x^2 + 8x + 6} + \dfrac{6}{4x^3 - 4x^2 - 8x} - \dfrac{5x}{x^3 + x^2 - 6x}$

3. If the product of $(1+2), (2+3)$, and $(3+4)$ is equal to one-half the sum of 20 and x, what is the value of x?

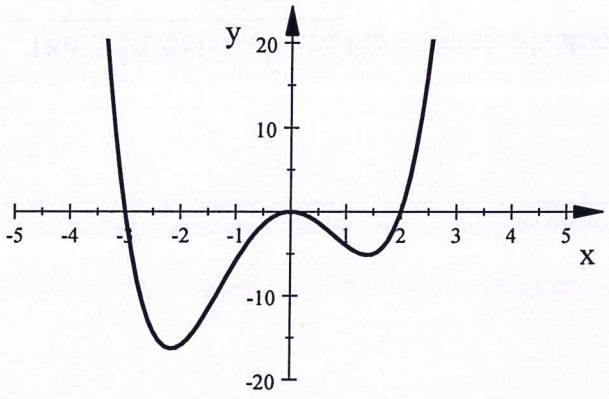
A. 10 B. 85 C. 105 D. 190 E. 1210

4. At Ernie's Fruit Stand, 3 apples and 5 cherries cost \$1.25. 15 apples and 100 cherries cost \$9.25. What is the cost of 6 apples and 35 cherries?

A. \$3.25 B. \$3.50 C. \$3.62 D. \$4.00 E. \$5.25

5. Which of the following could be an equation for the graph shown below?

A) $y = x(x+3)^2(x-2)$ B) $y = x(x+2)^2(x-3)$ C) $y = x^2(x+3)(x-2)$ D) $y = x^2(x+2)(x-3)$



Bellwork Alg 2 Wednesday, February 27, 2019 ANSWERS

Simplify each sum or difference.

1. $\frac{3x}{8x^4 - 128x^2} - \frac{7}{12x^3 - 42x^2 - 24x}$

$8x^2(x^2-16)$ $6x(2x^2-7x-4)$

$8x^2(x+4)(x-4)$ $6x(2x+1)(x-4)$

$\frac{9x(2x+1)}{3(2x+1)} \cdot \frac{3x}{8x^2(x+4)(x-4)} - \frac{7}{6x(2x+1)(x-4)} \cdot \frac{-28x(x+4)}{4x(x+4)}$

$18x^2 + 9x - 28x^2 - 112x$

$\frac{-10x^2 - 103x}{24x^2(x+4)(2x+1)}$

2. $\frac{8}{2x^2 + 8x + 6} + \frac{6}{4x^3 - 4x^2 - 8x} - \frac{5x}{x^3 + x^2 - 6x}$

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

$2(x+3)(x+1)$ $4x(x-2)(x+1)$ $x(x+3)(x-2)$

$\frac{16x(x-2)}{2x(x-2)} \cdot \frac{8}{2(x+3)(x+1)} + \frac{+6(x+3)}{4x(x-2)(x+1)} \cdot \frac{(x+3)}{(x+3)} - \frac{-20x(x+1)}{x(x+3)(x-2)} \cdot \frac{4(x+1)}{4(x+1)}$

$16x^2 - 32x + 6x + 18 - 20x^2 - 20x$

$\frac{-4x^2 - 46x + 18}{4x(x+1)(x+3)(x-2)}$

3. If the product of $(1 + 2), (2 + 3)$, and $(3 + 4)$ is equal to one-half the sum of 20 and x, what is the value of x?

A. 10 B. 85 C. 105 D. 190 E. 1210

$(3)(5)(7) = \frac{1}{2}(20+x)$

$2 \cdot 105 = \frac{1}{2}(20+x) \cdot 2$

$210 = 20 + x$

$-20 \quad -20$

$x = 190$

4. At Ernie's Fruit Stand, 3 apples and 5 cherries cost \$1.25. 15 apples and 100 cherries cost \$9.25. What is the cost of 6 apples and 35 cherries?

A. \$3.25 B. \$3.50 C. \$3.62 D. \$4.00 E. \$5.25

$5(3A + 5C = 1.25)$

$15A + 100C = 9.25$

$-\ 15A + 25C = 6.25$

$75C = 3.00$

$C = 0.04$

$3A + 5(0.04) = 1.25$

$3A + 0.20 = 1.25$

$3A = 1.05$

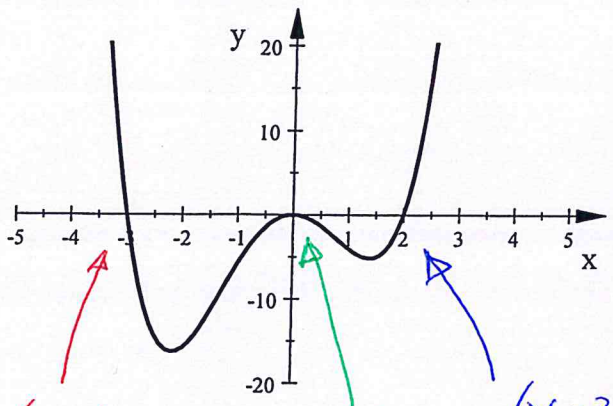
$A = 0.35$

$6(0.35) + 35(0.04)$

$= \$3.50$

5. Which of the following could be an equation for the graph shown below?

A) $y = x(x+3)^2(x-2)$ B) $y = x(x+2)^2(x-3)$ C) $y = x^2(x+3)(x-2)$ D) $y = x^2(x+2)(x-3)$



$(x+3)$ single zero at -3

x^2 Double zero at 0

$(x-2)$ single zero at $+2$

$y = x^2(x+3)(x-2)$