Simplify $\dfrac{n^2-16}{n^2+n-20}$

$\dfrac{(n-4)(n+4)}{(n-4)(n+5)}$ $[n \neq 4]$

$n+4 \overline{)\, n^2+5n-2}$ $\quad n+1+\dfrac{-6}{n+4}$ or $n+1-\dfrac{6}{n+4}$

n^2+4n

$n-2$

$-\ n+4$

-6

$\left(\dfrac{n^2y^{-2}}{a^{-4}}\right)^2 = \left(\dfrac{n^2a^4}{y^2}\right)^2$

$\dfrac{n^2a^4}{y^2} \cdot \dfrac{n^2a^4}{y^2} = \dfrac{n^4a^8}{y^4}$

Factor $3n^3 + 12n^2 + 2n + 8$

$3n^2(n+4) + 2(n+4)$

$(n+4)(3n^2+2)$

If f(x) = 3x – 10 and g(x) = 2x + 1, what is f(g(x))?

$f(2x+1) = 3(2x+1) - 10$

$6x+3-10$

$6x-7$

What is the distance from (-3,-2) to (1, -6)?

A. $4\sqrt{2}$
B. $3\sqrt{2}$
C. $2\sqrt{3}$
D. $2\sqrt{2}$

$D = \sqrt{\Delta x^2 + \Delta y^2}$

$\sqrt{4^2 + 4^2}$

$\sqrt{32} = \sqrt{2 \cdot 2 \cdot 2 \cdot 2 \cdot 2}$

$4\sqrt{2}$

What is the inverse of f(x) = 3x – 5?

$y = 3x - 5$

$x = 3y - 5$

$+5 \quad +5$

$x + 5 = 3y$

$\frac{x+5}{3} = \frac{3y}{3}$

Which is the equation that is parallel to y = 5x – 2 and goes through (1, 1)?

A. 5x – y = 4
B. 5x – 2y = 3
C. 5x + y = 6
D. -5x – y = -6

$y - y_1 = m(x - x_1)$

$y - 1 = 5(x - 1)$

$y - 1 = 5x - 5$

$+1 \quad +1$

$y = 5x - 4$

$-5x \quad -5x$

$-1[-5x + y = -4]$

$5x - y = 4$

$$\begin{cases} y = 3x - 1 \\ y + x = 15 \end{cases}$$

$3x - 1 + x = 15$

$4x - 1 = 15$

$x = 4 \quad \therefore y = 11$

What is the distance from (2, n) to (4, n + 2)?

$n - (n+2)$

$D = \sqrt{\Delta x^2 + \Delta y^2}$

$\sqrt{2^2 + 2^2}$

$\sqrt{8} = 2\sqrt{2}$

Factor $5a^2 + 10a^3$

$5a^2(1 + 2a)$

Find the equation of the line, in slope intercept form, that goes through the point (2, -1) and (3, -5)

$y - y_1 = m(x - x_1)$

$y + 1 = -4(x - 2)$

$y + 1 = -4x + 8$

$-1 \quad -1$

$y = -4x + 7$

$m = \frac{\Delta y}{\Delta x} = \frac{-5 + 1}{3 - 2}$

$\frac{-4}{1}$

-4

How many different ways can one answer a 10 question multiple choice test that has options A, B, C, and D?

$$\frac{215!}{213!} = \frac{215 \cdot 214 \cdot 213 \cdots 2 \cdot 1}{213 \cdot 212 \cdots 2 \cdot 1}$$

$$= 46{,}010$$

$$\begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix} \bullet \begin{bmatrix} 3 & -2 \\ -1 & -4 \end{bmatrix}$$

$$\begin{bmatrix} 6+-3 & -4-12 \\ 6+-4 & -4-16 \end{bmatrix} = \begin{bmatrix} 3 & -16 \\ 2 & -20 \end{bmatrix}$$

$$\begin{bmatrix} 2 & 3 \\ 5 & 9 \end{bmatrix} \bullet \begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix}$$

Simplify $\dfrac{n^2-16}{n^2+n-20}$ $= \dfrac{(n-4)(n+4)}{(n-4)(n+5)}$

$\dfrac{n+4}{n+5}$ $[n \neq 4]$

$$n+4 \overline{)\, n^2+5n-2}$$

$n + 1 + \frac{-6}{n+4}$ $\quad n+1-\frac{6}{n+4}$

$-(n^2+4n)$

$n-2$

$-(n+4)$

-6

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$$\begin{cases} y = 3x - 1 \\ y + x = 15 \end{cases}$$

$3x - 1 + x = 15$

$4x - 1 = 15$

$x = 4 \quad \therefore \quad y = 11$

What is the distance from (2, n) to (4, n + 2)?

$D = \sqrt{\Delta x^2 + \Delta y^2}$ $\qquad n-(n+2)$

$= \sqrt{2^2 + 2^2}$

$\sqrt{8}$

Factor $5a^2 + 10a^3$

$5a^2(1 + 2a)$

Find the equation of the line, in slope intercept form, that goes through the point (2, -1) and (3, -5)

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$-1 \qquad -1$

$y = -4x + 7$

$m = \frac{\Delta y}{\Delta x} = \frac{-1 - -5}{2 - 3}$

$\frac{4}{-1}$

-4

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$$\begin{bmatrix} 2 & 3 \\ 5 & 9 \end{bmatrix} \cdot \begin{bmatrix} 2 & 3 \\ 2 & 4 \end{bmatrix}$$