

Honors PreCalculus Summer Assignment

Simplify the expression

$$(-3x^2y^5)^2$$

$$(3x^4)(2x^7)$$

$$\left(\frac{5x^3}{y}\right)^{-2}$$

$$\left(\frac{3a^{-5}b^2}{12a^3b^{-4}}\right)^0$$

$$\left(\frac{x^4y^5z^6}{x^{-4}y^{-5}z^{-6}}\right)^{-4}$$

$$\sqrt{\frac{48x^3}{3x}}$$

$$\sqrt{\frac{200x^3}{10x^{-1}}}$$

$$3\sqrt{54} - 2\sqrt{24} - \sqrt{96} + 4\sqrt{63}$$

$$\sqrt{20} + 6\sqrt{5}$$

$$\frac{13}{3 + \sqrt{11}}$$

(can't leave a radical in denomi)

$$\sqrt[3]{125}$$

$$\sqrt[3]{-125}$$

$$\sqrt[3]{24xy^3} - y\sqrt[3]{81x}$$

$$125^{2/3}$$

$$32^{-4/5}$$

$$\frac{72x^{3/4}}{9x^{1/3}}$$

Simplify. Find all values that must be excluded from domain

$$\frac{x-3}{x^2+4x-45}$$

$$\frac{x^2-9}{x^2} \cdot \frac{x^2-3x}{x^2+x-12}$$

$$\frac{(x^2-4)}{(x-2)} \div \frac{(x+2)}{4x-8}$$

$$\frac{x^2+x-12}{x^2+x-30} \cdot \frac{x^2+5x+6}{x^2-2x-3} \div \frac{x+3}{x^2+7x+6}$$

$$\frac{4x^2+x-6}{x^2+3x+2} - \frac{3x}{x+1} + \frac{5}{x+2}$$

$$\frac{\frac{x}{x-2} + 1}{\frac{3}{x^2-4} + 1}$$

Solve

$$\frac{1}{x-4} - \frac{5}{x+2} = \frac{6}{x^2-2x-8}$$

$$3x+5 = 2x+13$$

$$\frac{2}{x-2} = \frac{x}{x-2} - 2$$

$$x^2 = 8x - 15$$

$$x^2 - 4x - 5 = 0$$

$$4x^2 - 2x + 3 = 0$$

$$3x^2 = 2x - 1$$

How many solutions?

Find the Product

$$(x+8)(x+5)$$

$$(2-y^5)(2+y^5)$$

$$(x+2)^2 \text{ (most common Algebra mistake!)}$$

$$(x^2y^2-2)^2$$

$$(3x+5)(2x-9) - (7x-2)(x+1)$$

Factor

$$(x^2+5x+6)$$

$$(x^2-2x-15)$$

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

$$(2x^2+3xy+y^2)$$

$$(36x^2-49)$$

$$(x^4-16)$$

$$(x^2+2x+1)$$

$$(x^2-12x+36-49y^2)$$