College Alg Station Math Review P.5-P.6

Stations

Go to all eight stations in any order. Show your work and circle your answer.

Station #1

Find the Domain of the Expression

a) $\frac{5x}{(x-3)}$ $\{x : x \neq 3\}$

b) $\sqrt{x-8}$ $\{x \geq 8\}$

Station #2

Factor Completely

a) $64 - x^2$ $(8+x)(8-x)$

$-x^2 - 64$

b) $x^2 - 11x + 28$ $-7, -4, \frac{28}{-4}, -11$ $(x-7)(x-4)$

Station #3

Write the Expression in Simplest form. Then state any restriction on the Domain

$\frac{x^2+3x-18}{x^2-36}$ -18 $6, -3$ $(x+6)(x-3)$ $(x+6)(x-6)$ -3 -6 2

$\frac{x-3}{x-6}$

$\{x : x \neq 6, -6\}$

Station #4

Factor the Simplify and State any Restrictions on Domain

$\frac{x^3-27}{x^2-x-6}$ $(x-3)(x^2+3x+9)$ $(x-3)(x+2)$

$\frac{x^2+3x+9}{x+2}$

$\{x : x \neq 3, -2\}$

Station #5

Perform the Indicated operations

$\frac{6x+2}{x^2-1} \cdot \frac{x-1}{3x^2+x}$ $2(3x+1)(x-1)$ $(x+1)(x-1)x(3x+1)$

$\frac{2}{x(x+1)}$

Station #6

Perform the Indicated Operation

$\frac{x^2+6x+9}{x^2-4} \div \frac{x^2-9}{x-2}$ 9 $3, 3$ 6

$\frac{(x+3)(x+3)}{(x-2)(x+2)} \cdot \frac{(x-2)}{(x+3)(x-3)}$

$\frac{(x+3)}{(x-3)(x+2)}$

$\{x : x \neq \pm 2, \pm 3\}$

Station #7

Factor Completely

$y^3 - 125$

$(y-5)(y^2+5y+25)$

Station #8

Factor Completely

x^3+2x^2-4x-8

$x^2+10x+25-9x+2$

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

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

$(x+2)(x-2)(x+2)$

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$-7, -4, 28, -11$

STATION 3

$\frac{\frac{1}{x^3} - \frac{1}{3}}{\frac{3}{3x} - \frac{x}{3x}}$

$\frac{\frac{1}{x}}{\frac{3-x}{3x}}$

$\frac{1}{x} \cdot \frac{3x}{3-x}$

$\frac{3}{(3-x)}$ $\{x : x \neq 0\}$

Station 4

$\frac{\frac{2x+3}{(x-3)(x-4)} - \frac{2}{x-3}}{\frac{x^2-7x+12}{(x-4)}}$

$\frac{2x+3}{(x-3)(x-4)} - \frac{2(x-4)}{(x-3)(x-4)}$

$\frac{2x+3-2x+8}{(x-3)(x-4)}$

$\frac{11}{(x-3)(x-4)}$ $\{x : x \neq 3, 4\}$

$\frac{13}{-3.4} - 7$