ALGEBRA ZONE

ALGEBRA ZONE 1

1. Find the equation of the line through the points $(1, 5)$ and $(7, 2)$.

2. Simplify: $\frac{2x^2-8x}{x^2+2x-24}$

ALGEBRA ZONE 2

3. Simplify: $\frac{5-x^2+4\sqrt{x}}{\sqrt{x}}$

4. Simplify: $\frac{\frac{5}{x}-2}{4-\frac{1}{3x}}$

ALGEBRA ZONE 3

5. Solve: $\frac{2}{x}+\frac{5}{x+5}=0$

6. Solve: $\sqrt{x+12}=x+6$

FUNCTION ZONE 1

1. Given $f(x)=\frac{\sqrt{x^2+16}}{x+8}$, find $f(-3)$

2. Given $g(t)=2t^2-7t+12$, find $g(t+7)$. Simplify.

FUNCTION ZONE 2

3. Find all x-values not in the domain of $f(x)=\frac{5}{(2x-14)(3x^2+27)}$.

4. Find the domain of $g(x)=\sqrt{5-2x}$

FUNCTION ZONE 3

5. If $f(x) = 4x^2 - 4x$ and $g(x) = \sqrt[3]{2x^2}$, find $(f \circ g)(2)$

6. If $f(x) = \frac{2x-4}{2-x}$, find $f^{-1}(3)$.

EXP AND LOG ZONE 1

1. Factor: $e^x(2x + x^2) + e^x$

2. Expand: $\ln\left(\frac{2x^2y^3}{(x+7)^9}\right)$

EXP AND LOG ZONE 2

3. Solve for x: $4e^{3x} - 12 = 0$

4. Solve for x: $4e^x - x^2e^x = 0$