INTERMEDIATE ALGEBRA

TEST 3

92 Exelue! +5 NAME: Antoinette Durden

No books and no notes. Be sure to set up each problem before evaluation. Show all work in the space provided for full credit.

1. Evaluate the following: (8 points)

$$\frac{2x^{2}-3x-2}{(x+1)(7x+1)} \cdot \frac{(x-2)(x+3)}{7x^{2}+8x+1} = \frac{2x^{2}-3x-2}{(x+1)(7x+1)} \cdot \frac{7x^{2}+8x+1}{(x-2)(x+3)} = \frac{(2x+1)(x-2)}{(x+1)(7x+1)} \cdot \frac{(2x+1)(x+1)}{(x-2)(x+3)} = \frac{(2x+1)(x-2)}{(x+1)(7x+1)} \cdot \frac{(2x+1)(x+1)}{(x+3)(x+3)} = \frac{(2x+1)(x-2)}{(x+1)(7x+1)} \cdot \frac{(2x+1)(x+1)}{(x+3)(x+3)} = \frac{(2x+1)(x-2)}{(x+1)(7x+1)} \cdot \frac{(2x+1)(x+1)}{(x+3)(x+3)} = \frac{(2x+1)(x-2)}{(x+3)(x+3)} = \frac{(2x+1)(x-2)}{(x+3)(x+3)} = \frac{(2x+1)(x-2)}{(x+3)(x+3)} = \frac{(2x+1)(x-2)}{(x+3)(x+3)} = \frac{(2x+1)(x-2)}{(x+3)(x+3)} = \frac{(2x+1)(x-2)}{(x+3)(x+3)} = \frac{(2x+1)(x+3)}{(x+3)(x+3)} = \frac{(2x+1)$$

2. Simplify the following complex fractions. (8 points)

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$$\sqrt[4]{\frac{4}{y} + \frac{8}{y^2}}$$

$$\sqrt[4]{\frac{6}{y} + \frac{12}{y^2}}$$

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$$\sqrt[4$$

3. Solve the equation and give the domain and the solution set. (12 points)

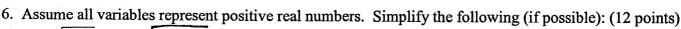
Solve the equation and give the domain and the solution set. (12 points)
$$\frac{5}{x-3} - \frac{3}{x+3} = \frac{4}{x^2-9} \implies \frac{5(x+3)-3(x-3)}{(x+3)(x-3)} = \frac{4}{(x+3)(x-3)} = \frac$$

4. Find the missing number in the proportion. (12 points)
$$\frac{k}{12} = \frac{4}{3} \quad |2| \quad |4| \quad |3| \quad |4| \quad |4$$

5. The current in a simple electrical circuit is <u>inversely proportional</u> to the resistance. If the current is 5 Amperes when the resistance is 20 ohms, find the current when the resistance is 25 ohms. (10 points)

[Hint:
$$y = \frac{k}{x}$$
: y varies inversely as x.] $5 = \frac{k}{20} \implies k = 100$

$$C = \frac{100}{25} = 4$$



a)
$$\sqrt[3]{-\frac{27}{64}} = \sqrt[3]{(-1)(\frac{27}{64})} \Rightarrow \sqrt[3]{27} = \sqrt[3]{81x^3y} - \sqrt[4]{16x^7y} = \sqrt[3]{x^3y} - \sqrt[3]{x^$$

a)
$$(x+10)^2 = 6$$

 $x+10 = \pm \sqrt{6}$
 $x = 10 + \sqrt{6}$ or $x = 10 - \sqrt{6}$
 $x = 10 + \sqrt{6}$

$$(a-4)^3 = 8$$
 $a-4 = £78$
 $a-4=52$
 $a=4+2$
 $a=4-2$
 $a=4$
 $a=4$
 $a=4$
 $a=4$

a)
$$(8-i)(5-2i)$$

= $40-5i-16i+2i^2$
= $40-21i+2(-i)$
= $(38-21i)$

b)
$$\frac{(3i)}{(5-4i)}$$
 $\frac{(5+4i)}{(5+4i)}$ $\frac{($