

Student: _____

Instructor: Garth Isaak

Assignment: Algebra practice diagnostic 1b

Date: _____

Course: precalc blitzer (1)

Time: _____

Book: Blitzer: Precalculus Essentials, 3e

1. Evaluate the algebraic expression for the given values of the variables.

$$\frac{y - 2x}{6x + xy}; x = -2 \text{ and } y = 1$$

A. $-\frac{1}{14}$

B. $-\frac{5}{14}$

C. $\frac{3}{10}$

D. $\frac{3}{14}$

2. Use the quotient rule to simplify the expression.

$$\frac{\sqrt{72x^4}}{\sqrt{3x}}$$

A. $2|x|\sqrt{6x}$

B. $3|x|\sqrt{x}$

C. $\frac{x^2\sqrt{72}}{3}$

D. $72x^3$

3. Find the product.

$$(x + 8)(x - 8)$$

A. $x^2 - 16x - 64$

B. $x^2 - 16$

C. $x^2 + 16x - 64$

D. $x^2 - 64$

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4. Factor and simplify the algebraic expression.

$$x^{2/3} - x^{1/3}$$

- A. $x(x^{1/3} - 1)$
 B. $x^{2/3}(1 - x^{1/3})$
 C. $x^{1/3}(x^{1/3} - 1)$
 D. $x^{1/3}(x^2 - 1)$

5. Simplify the following expression.

$$\frac{x^2 + 13x + 40}{x^2 + 10x + 16} \cdot \frac{x^2 + 6x + 8}{x^2 + 9x + 20}$$

- A. $\frac{1}{x+4}$
 B. $\frac{x+5}{x+2}$
 C. 1
 D. $\frac{x+2}{x+4}$

6. Solve the quadratic equation by the method of your choice.

$$2x^2 + 8x + 5 = 0$$

- A. $\left\{ \frac{-8 - \sqrt{6}}{2}, \frac{-8 + \sqrt{6}}{2} \right\}$
 B. $\left\{ \frac{-4 - \sqrt{26}}{2}, \frac{-4 + \sqrt{26}}{2} \right\}$
 C. $\left\{ \frac{-4 - \sqrt{6}}{3}, \frac{-4 + \sqrt{6}}{3} \right\}$
 D. $\left\{ \frac{-4 - \sqrt{6}}{2}, \frac{-4 + \sqrt{6}}{2} \right\}$

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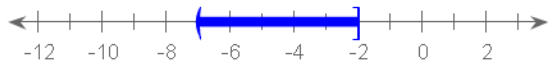
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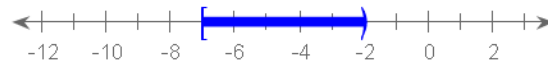
7. Solve the compound inequality. Other than \emptyset , use interval notation to express the solution set and graph the solution set on a number line.

$$-12 \leq -2x + 2 < -2$$

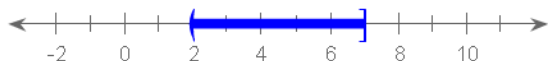
A. $(-7, -2]$



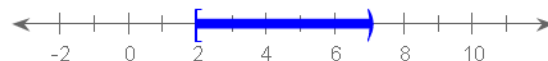
B. $[-7, -2)$



C. $(2, 7]$



D. $[2, 7)$



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1. B

2. A

3. D

4. C

5. C

6. D

7. C
