

Student: _____
Date: _____
Time: _____

Instructor: Garth Isaak
Course: precalc blitzer (1)
Book: Blitzer: Precalculus Essentials, 3e

Assignment: Algebra practice diagnostic 3b

1. Simplify the exponential expression.

$$\frac{14x^{11}y^{10}z^3}{2x^7y^4z^2}$$

- A. $7x^4y^6$
 B. $7x^4y^6z$
 C. x^4y^6z
 D. $7x^3y^5z$

2. Evaluate the expression without using a calculator.

$$49^{-3/2}$$

- A. -343
 B. $\frac{1}{343}$
 C. $-\frac{1}{343}$
 D. 343

3. Perform the indicated operations.

$$(3x^4y^2 + 12x^3y + 4y) - (9x^4y^2 + 6x^3y + 11y + 2x)$$

- A. $-6x^4y^2 + 6x^3y - 7y + 2x$
 B. $-6x^4y^2 - 6x^3y - 7y - 2x$
 C. $-6x^4y^2 + 6x^3y - 7y - 2x$
 D. $12x^4y^2 + 18x^3y + 15y + 2x$

4. Factor the following polynomial using the formula for the sum or difference of two cubes.

$$64x^3 + 125$$

- A. $(4x + 5)(16x^2 + 20x + 25)$
 B. $(4x + 5)(16x^2 + 25)$
 C. $(4x - 5)(16x^2 + 20x + 25)$
 D. $(4x + 5)(16x^2 - 20x + 25)$

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5. Simplify the expression.

$$\frac{\sqrt{x} - \frac{1}{9\sqrt{x}}}{\sqrt{x}}$$

A. $1 - \frac{1}{9}$

B. $1 - \frac{1}{9x}$

C. $\frac{\sqrt{x} - \frac{1}{9\sqrt{x}}}{\sqrt{x}}$

D. $x^2 - \frac{1}{9x}$

6. Solve the formula for h.

$$S = 2\pi rh + 2\pi r^2$$

A. $h = \frac{S}{2\pi r} - 1$

B. $h = \frac{S - 2\pi r^2}{2\pi r}$

C. $h = S - r$

D. $h = 2\pi(S - r)$

7. Using data from 1996-1998, the annual number of cars sold at a certain dealership can be modeled by the formula $y = 2x + 5$, where y is the number of cars, in thousands, sold x years after 1996. According to this formula, in which years will the number of cars sold exceed 21 thousand?

A. Years after 2004

B. Years after 2006

C. Years after 2008

D. Years after 2002

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1. B

2. B

3. C

4. D

5. B

6. B

7. A
