Student: _____	**Instructor:** Garth Isaak	**Assignment:** Algebra practice diagnostic 3a
Date: _____	**Course:** precalc blitzer (1)	
Time: _____	**Book:** Blitzer: Precalculus Essentials, 3e	

1. Simplify the exponential expression.

$\left(\frac{x^2}{2}\right)^3$

A. $\frac{x^6}{2}$

B. $\frac{x^6}{8}$

C. $\frac{x^5}{8}$

D. $\frac{x^5}{2}$

2. Evaluate the expression without using a calculator.

$81^{-3/2}$

A. -729

B. $\frac{1}{729}$

C. 729

D. $-\frac{1}{729}$

3. Perform the indicated operations.

$(11x^2y - 6xy + 10) + (-10x^2y + 12xy - 7)$

A. $21x^2y + 18xy + 17$

B. $6x^3y^2 + 3$

C. $-x^2y - 18xy + 17$

D. $x^2y + 6xy + 3$

4. Factor the following polynomial completely, or state that the polynomial is prime.

$12x^3 - 432x$

A. $12x(x+6)(x-6)$

B. $x(x+6)(12x-72)$

C. $12(x+6)(x^2-6x)$

D. prime

5. Simplify the expression.

$$\frac{\sqrt{2-x^2}+\dfrac{x^2}{\sqrt{2-x^2}}}{2-x^2}$$

A. $\dfrac{1+x^2}{(2-x^2)^{3/2}}$

B. $\dfrac{2+2x^2}{(2-x^2)^{3/2}}$

C. $\dfrac{\sqrt{2-x^2}+\dfrac{x^2}{\sqrt{2-x^2}}}{2-x^2}$

D. $\dfrac{2}{(2-x^2)^{3/2}}$

6. Solve the formula for n.

$$I=\frac{nE}{nr+R}$$

A. $n=\dfrac{IR}{Ir+E}$

B. $n=\dfrac{-R}{Ir-E}$

C. $n=IR(Ir-E)$

D. $n=\dfrac{IR}{E-Ir}$

7. When making a long distance call from a certain pay phone, the first three minutes of a call cost $1.65. After that, each additional minute or portion of a minute of that call costs $0.25. Use an inequality to find the number of minutes one can call long distance for $4.90.

A. 16 minutes or fewer

B. 20 minutes or fewer

C. 13 minutes or fewer

D. 3 minutes or fewer

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1. B

2. B

3. D

4. A

5. D

6. D

7. A