

## Practice Test Ch P Pre-Calculus

Evaluate.

1)  $-3x^2 + 4x - 3$  for  $x = -2$

2)  $\frac{3x^2 - 3}{x + 5}$  for  $x = -3$

Simplify.

3)  $5x^2 + 7 - [5(x^2 - 3) + 2]$

4)  $5 - 10 \div 5 \cdot 3$

5)  $\frac{-72x^8y^3}{9x^{-2}y^6}$

6)  $(-8x^{-3}y^5)^3$

7)  $\left(\frac{7xy}{5x^3y^{-4}}\right)^{-3}$

8)  $(7x^5y^6)(-3x^2y)$

9)  $5\sqrt{27} + \sqrt{12}$

10)  $6\sqrt{x^2}$

Rationalize the denominator.

11)  $\frac{6}{5 + \sqrt{3}}$

Simplify.

12)  $27^{\frac{1}{3}}$

13)  $64^{\frac{2}{3}}$

Perform the indicated operations. Write your answer in standard form.

14)  $(5x^3 - 4x^2 + 3x + 5) - (4x^3 + 7x - 8)$

15)  $(2x + 6)(2x^2 + 5x + 3)$

16)  $(3x + 2)^2$

17)  $(2x - 1)^3$

Factor completely.

18)  $3x^3 + 8x^2 + 8x$

$$19) x(x-2)^{\frac{1}{2}} + (x-2)^{\frac{1}{2}}$$

$$20) 3x^4 + 6x^3 - 27x^2 - 54x$$

$$21) 64x^4 - 125x$$

Perform the indicated operations and simplify your answer.

$$22) \frac{3x-15}{x} \div \frac{3x-12}{x^2-4x}$$

$$23) \frac{4x-20}{x-4} \cdot \frac{3x^2-12x}{x^2-5x}$$

$$24) \frac{3}{x+3} + \frac{3x}{x^2-4x}$$

$$25) \frac{7}{x-3} - \frac{2x}{x^2-9}$$

Simplify.

$$26) \frac{\frac{x}{x-6} + \frac{2}{7}}{x-6}$$

Rationalize the numerator.

$$27) \frac{\sqrt{x} - \sqrt{y}}{x^2 - y^2}$$

Solve for  $x$ .

$$28) \frac{-2}{x+2} + \frac{4}{x-3} = \frac{5}{x^2 - x - 6}$$

$$29) 3(x^2 - 5) = 3(x + 2)^2$$

$$30) 5x^2 - 2 = -3x$$

$$31) |5 - 3x| = 7$$

Solve the inequality and graph on a number line.

$$32) 5 - 3x < 7$$

$$33) |9 - 3x| \geq 12$$