

## Chapter 5A - PreCalc Algebra Review

Do all of these problems in your notebook!

Multiply:

1.  $(3x+10)(x-2)$

2.  $(7a+11b)(7a-11b)$

3.  $(3x+5y)(3x-5y)$

Factor:

4.  $-x^2 - 3x + 18$

5.  $9x^2 - 25$

6.  $3x^2 + 7x + 2$

7.  $-2x^3 + 4x^2$

8.  $-12a^3b + 75ab^3$

9.  $4a^2 - 25b^2$

10.  $-18c^3 + 128c^2$

11.  $242a^3 - 200a$

12.  $3m^2 + 21m - 54$

13.  $-10x^2y^3z^2 + 45xy^5z^3$

14.  $-3x^2y^6 + 21xy^4 - 30x^3y$

15.  $15a^7b^2 - 40a^2b - 5a^5b^4$

Simplify: (Rationalize the denominator.)

16.  $\frac{1}{3\sqrt{2}}$

17.  $\frac{6}{7+\sqrt{5}}$

18.  $\frac{3+\sqrt{5}}{2-\sqrt{3}}$

19.  $\frac{8}{6-5i}$

20.  $\frac{2i}{4-3i}$

21.  $\frac{5-2i}{4+3i}$

Add or subtract:

22.  $\frac{7}{5x} + \frac{8}{3x}$

23.  $\frac{4z}{5x^2y} - \frac{2}{3zy}$

24.  $\frac{x}{x-4} - \frac{6}{x+3}$

25.  $\frac{5}{6x^2} - \frac{x}{4x^2-12x}$

26.  $\frac{x+1}{x^2+4x+4} - \frac{2}{x^2-4}$

27.  $\frac{10x}{3x^2-3} - \frac{4}{x-1} + \frac{5}{6x}$

Simplify the complex fractions:

28.  $\frac{1}{\frac{1}{x} + \frac{1}{y}}$

29.  $\frac{\frac{x}{5} + 4}{8 + \frac{1}{x}}$

30.  $\frac{\frac{15}{2x}}{\frac{6}{x} - \frac{1}{2}}$

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