

**Math 06, Homework 5 on Sections 9.1, 9.2, 9.3**  
**due Mon, Oct 7 at the start of class.**

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Write all your answers on a separate sheet. It is very important that you show clearly any work you had to do to get the answer. These first eight questions are 1 point each. You won't get the point if your answer doesn't match the solution on page 2!

- (1) Evaluate  $\frac{2-3x}{x^2-4}$  for  $x = -1$ .
- (2) For what value of  $x$  is  $\frac{2x-3}{2x-1}$  undefined?
- (3) Simplify:  $\frac{x^2+2x+1}{6x+6}$
- (4) Compute and simplify:  $\frac{4xy^2}{15x^3} \cdot \frac{25xy}{16y^3}$
- (5) Compute and simplify:  $\frac{c^2+2c-8}{6c} \div \frac{5c+20}{18c}$
- (6) Compute and simplify:  $\frac{9}{4x^3} + \frac{3}{4x^3}$
- (7) Compute and simplify:  $\frac{y^2}{2y+8} + \frac{3y-4}{2y+8}$
- (8) Compute and simplify:  $\frac{5m-2}{m-6} - \frac{3m+10}{m-6}$
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These next seven questions are 4 points each. Show clearly all your working out and reasoning.

- (9) Evaluate  $\frac{-3x^2+4}{-3x-4}$  for  $x = -2$ .
- (10) Simplify if possible (by factoring top and bottom first):  $\frac{x^2+x-6}{x^2-x-6}$
- (11) Compute and simplify:  $\frac{2x+4}{x+4} \cdot \frac{x^2+8x+16}{x+2}$
- (12) Compute and simplify:  $\frac{x^2}{x+5} \div \frac{3x}{5x+25}$
- (13) Compute and simplify:  $\frac{x}{2} + \frac{x}{3}$

(14) Compute and simplify:  $\frac{6x}{x+4} + \frac{24}{x+4}$

(15) Compute and simplify:  $\frac{3}{x+3} - \frac{3}{2x+6}$

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**Answers to questions (1)-(8):**

(1)  $-5/3$

(2) Undefined at  $x = 1/2$  (because this  $x$  makes the denominator 0)

(3)  $\frac{x+1}{6}$

(4)  $\frac{5}{12x}$

(5)  $\frac{3c-6}{5}$

(6)  $\frac{3}{x^3}$

(7)  $\frac{y-1}{2}$

(8) 2