

Math 103
Summer II 2011
Exam #2

Name:

1. 10 pts. Divide $\frac{2x^3 - 11x^2 + 25}{x - 5}$
2. 10 pts. each Factor out the greatest common factor, simplifying the factors if possible.
 - (a) $8r^3 + 24r$
 - (b) $15y^3z^3 + 27y^2z^4 - 36yz^5$
 - (c) $2(x + 7)^3 - 3(x + 7)^2$
3. 10 pts. Factor $20 + 5s + 12t + 3st$ by grouping
4. 10 pts. each Factor each fully.
 - (a) $r^2 - 2r - 35$
 - (b) $15p^2 + 24pq + 8q^2$
 - (c) $18c^2 - 98d^2$
 - (d) $27y^3 + 8$
 - (e) $x^4 - 625$
5. 10 pts. each Solve each equation by factoring.
 - (a) $3x^2 + 3 = -10x$
 - (b) $6x^3 - 13x^2 = 5x$
6. 10 pts. each Write each in lowest terms.
 - (a) $\frac{v^2 - 36}{5v + 30}$
 - (b) $\frac{8x^2 - 10x - 3}{8x^2 - 6x - 9}$
7. 10 pts. each Multiply or divide as indicated, and write in lowest terms.
 - (a) $\frac{u^3v^2}{15u^2v^4} \div \frac{12u^4v^2}{5v^{11}}$
 - (b) $\frac{z^2 - 1}{6z} \cdot \frac{2}{1 - z}$
 - (c) $\frac{t^2 - 49}{t^2 + 4t - 21} \cdot \frac{t^2 + 8t + 15}{t^2 - 2t - 35}$
8. 10 pts. each Add or subtract as indicated, and write in lowest terms.
 - (a) $\frac{7}{3y} + \frac{9}{4y}$
 - (b) $\frac{1}{x + 2} - \frac{1}{x - 3}$
 - (c) $\frac{5x}{x - 3} + \frac{2}{x} + \frac{6}{x^2 - 3x}$
9. 10 pts. Simplify the complex fraction:
$$\frac{4 - \frac{1}{p}}{9 + \frac{5}{p}}$$
10. 10 pts. each Solve each equation.
 - (a) $2 - \frac{5}{2x} = \frac{2x}{x + 1}$
 - (b) $\frac{2x}{x - 3} + \frac{4}{x + 3} = \frac{-24}{x^2 - 9}$
11. 10 pts. Solve $\frac{1}{p} + \frac{1}{q} = \frac{1}{f}$ for p .