

MA 108R Further review questions
Fall 2008

1. Use properties of exponents to simplify (Note your final answers should have only positive exponents):
 - (i) $(\frac{2x^5}{x^3})^2$
 - (ii) $(3x^4)^2$
2. Perform the indicated operations:
 - (i) $(2x - 3)(4x + 5)$
 - (ii) $(3y - 2z^2)(3y + 2z^2)$
3. Factor the expressions completely (remember to look for common factors first):
 - (i) $9y^2 - 36$
 - (ii) $6x^2 - 13x - 5$
4. State and use the quadratic formula to find solutions to the equation: $5x^2 + 8x = 3$. (Leave the solutions in exact form-no decimal approximations)
5. State and use the distance formula to find the distance between the points (3,4) and (-3,-4). Leave your answer in exact form.
6. Find the equation of the line passing through the point (1, -3) and perpendicular to the line $x - 3y + 5 = 0$. Write the equation in slope-intercept form.
7. Use the substitution method to find the solution to the following system:

$$\begin{aligned}x^2 + y^2 &= 9 \\x + y &= 3\end{aligned}$$

Graph the system to check your answer.

8. What's the vertex and x -intercepts of the following quadratic function.

$$f(x) = 3x^2 + 12x - 9$$

9. Find the solution(s). Remember to check your answers.

$$x + 3 = \sqrt{4x^2 - 4x + 12}$$

10. More questions on the review sheet, also on the web. The final will be two hours, expect more than nine questions.