

MATH 251 (PHILLIPS) MIDTERM 0 EXTRA PROBLEM LIST SET 2

1. Find all real solutions to the equation $\frac{6}{x} + \frac{7}{x^2} = 1$. If no real solution exists, write “no solution”.

2. Simplify the following expression as much as possible. If no simplification is possible, write “not possible”: $\frac{x^3 + 7x}{x^3 + 2x}$

3. Simplify completely (for $x > 0$): $\frac{(2\sqrt{x})^3}{(2x^{3/2})^2}$

4. Multiply out: $(y - 5)(y^2 + 3y - 2)$.

5. Let $f(x) = 7 - x$. Evaluate the expression $f(2 - x) - f(x)$, and simplify it as much as possible.

6. Find all real numbers a such that $|a + 2| = -a - 2$.

7. Find all real solutions to the equation $3y^{-3} = 0$. If no real solution exists, write “no solution”.

8. Find all real solutions to the equation $4e^{-3x} + 11 = 3$. If no real solution exists, write “no solution”.

9. Write as a single fraction, and simplify as much as possible: $\frac{2}{p+4} - \frac{1}{p+5}$

10. The curve in the graph below (at the left) is the graph of the function $y = 2x^2$. Find the **exact** values of **both** coordinates of **all** points at which this curve intersects the horizontal line.

