

NAME: _____

Student id: _____

INSTRUCTIONS: No books, notes, calculators, etc. All answers must be simplified as much as possible. Write all answers in the spaces provided at the right. Do scratchwork on the back or on scratch paper provided. *No partial credit.* Time: 20 minutes.

1. Find all real solutions to the equation $9z^{-4} = 0$. If no real solution exists, write “no solution”.

Answer: _____

2. Write as a single fraction, and simplify as much as possible: $\frac{2}{x-6} - \frac{1}{x+5}$

Answer: _____

3. Let $f(x) = 3 - x$. Evaluate the expression $f(4) - f(x - 2)$, and simplify it as much as possible.

Answer: _____

4. Find all real solutions to the equation $2e^{11x} - 9 = 13$. If no real solution exists, write “no solution”.

Answer: _____

5. Find the domain of the function $f(x) = \sqrt{-x}$.

Answer: _____

6. Find all real solutions to the equation $\left(\frac{x}{6}\right)(5 - x) = 1$. If no real solution exists, write “no solution”.

Answer: _____

7. Simplify the following expression as much as possible. If no simplification is possible, write “not possible”: $\frac{w^3 + 8w}{w^3 + 2w}$

Answer: _____

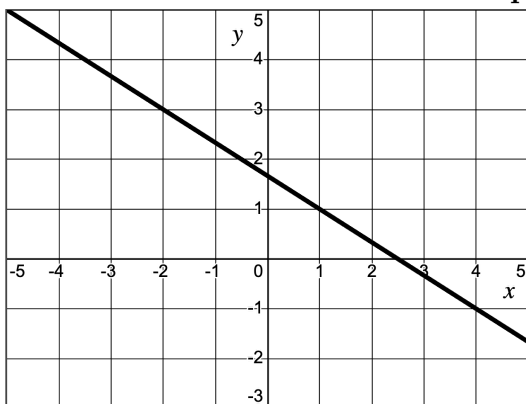
8. Multiply out: $(t + 1)(t^2 - 3t - 1)$.

Answer: _____

9. Simplify completely (for $c > 0$): $\left(\frac{c^3\sqrt{5}}{5\sqrt{c}}\right)^2$

Answer: _____

10. Determine the exact value of the **slope** of the line in the graph below.



Answer: _____