Your name:

Instructions: Please answer the following and be sure to show your work or support your answer. You are not allowed to use the textbook, workbook, or notes. You cannot talk to other sudents. You may use your calculator.

1. Find values of x and y that satisfies the following equation: $x - 2i^2 + 7i = yi + 2xi^3$

Real part $x + 2 = 0$ $\Leftrightarrow$ $\underline{x = -2}$

Imaginary part $7i = (y - 2x) i$

$y - 2x = 7$

$\Leftrightarrow y + 4 = 7$ So $\underline{y = 3}$

2. Simplify

$$\frac{1+i}{1-i}.$$

$$\frac{1+i}{1-i} = \frac{1+i}{1-i} \cdot \frac{1+i}{1+i} = \frac{1+2i-1}{1^2+1^2} = \frac{2i}{2} = i$$