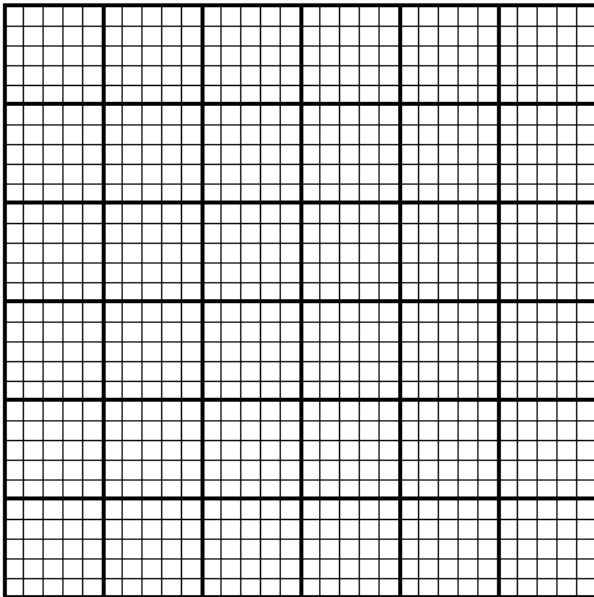


# Quiz 1A, Business Calculus

Spring 2017 - Dr. Graham-Squire

Name: \_\_\_\_\_

1. (4 points) Amazon is trying to figure out the cheapest route to deliver a package to a house. The Amazon shipping center is at the point  $(0,0)$ , and the home is at the point  $(12,5)$ , with each number measured in miles. Amazon can either ship the package directly by drone, at a cost of \$1.25 per mile, or they can ship the package via drone (still at a cost of \$1.25 per mile) to a post office located at  $(2,5)$ , and the post office will deliver the package to the home for \$8 from there. Is it cheaper to ship it directly via drone, or to ship it to the post office and pay the extra \$8? Show/explain your work.

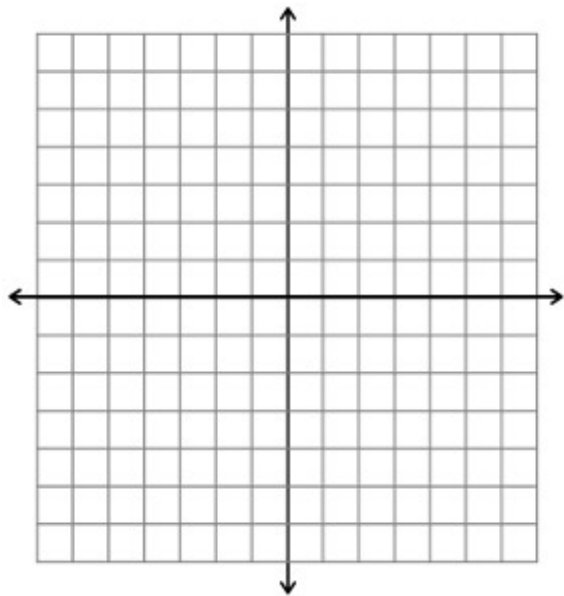


2. (2 points) Simplify the expression by combining like terms, factoring and canceling, if possible. Show/explain your work.

$$\frac{2x^2 - 5x - (x^2 - 2x + 40)}{x^2 - 9x + 8}$$

3. (4 points) Sketch a graph of the piecewise function, then answer the questions below. Make sure to place appropriate open and closed circles on your graph!

$$f(x) = \begin{cases} x^2 - 3 & \text{if } x \leq 2 \\ -2x + 8 & \text{if } x > 2 \end{cases}$$



Calculate (a)  $f(-3)$

(b)  $f(2)$

(c)  $f(10)$