Math 1303 - Math in the Liberal Arts
Quiz #12 - 2005.11.09
Solutions

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1. F varies jointly as M_1 and M_2 and inversely as the square of G. Find F when $M_1 = 125$, $M_2 = 8$, $G = 5$ and the constant of proportionality is $\frac{5}{8}$.

The formula is defined to be:

$$F = k\frac{M_1 M_2}{G^2}.$$

Upon substituting the values given in the problem, we have

$$F = \frac{5}{8}\frac{125 \cdot 8}{5^2} = 25.$$

2. Graph the solution set of the following inequality, where z is a real number, on the number line.

$$-1 < -2z + 3 \le 5$$

Subtracting 3 from both sides gives

$$-4 < -2z \le 2.$$

Dividing both sides by -2 gives

$$-1 \le z < 2.$$

Graphing this inequality on the number line yields the solution found below: