Latex Example 1.1 - Math 348

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Theorem. *For all real numbers x and y,*

$$xy| = |x||y|$$

.

Proof. To prove this, first suppose that $x \geq 0$ and $y \geq 0$. Then $xy \geq 0$. By definition of absolute value, $|xy| = xy$, $|x| = x$ and $|y| = y$. Therefore $|xy| = |x||y|$.

Modified for pictures.

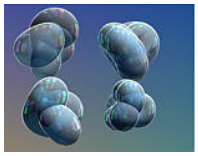

Figure 1: This is a 2 inch wide figure.jpg included in this tex.pdf

Next suppose that $x \geq 0$ and $y < 0$. Then $xy \leq 0$. By definition, $|xy| = -(xy)$, $|x| = x$ and $|y| = -y$. Since $-(xy) = x(-y)$, we conclude that $|xy| = |x||y|$.
You may need this kind of math for your essay for F3. In general, you'll do well to just look on the web (google: latex symbols) For example, a fraction with roots

$$\frac{x}{\sqrt{1+x^2}}.$$

You can try to place a picture without special formatting, but you may not succeed in getting just what you want.