

1 Examples:

1.1 Proof of AM-GM

Now, if we can prove

$$\left(2\sqrt{\frac{a}{b}}\right)^m + \left(2\sqrt{\frac{b}{a}}\right)^m \geq 2^{m+1}$$

then we will be done. Dividing both sides of this inequality by 2^m yields

$$\left(\frac{a}{b}\right)^m + \left(\frac{b}{a}\right)^m \geq 2,$$

which we can verify easily by AM-GM on the reciprocals that make up the LHS, thus we have our desired

$$\left(1 + \frac{a}{b}\right)^m + \left(1 + \frac{b}{a}\right)^m \geq \left(2\sqrt{\frac{a}{b}}\right)^m + \left(2\sqrt{\frac{b}{a}}\right)^m \geq 2^{m+1}.$$

1.2 Math Etc.

This will be an example equation:

$$\lim_{x \rightarrow \inf} e^x \neq \int_{x^2}^{x^3} |\rho| d\phi$$

Now I would like to show some sub points of this equation:

1.2.1 Form 1:

$$\frac{\text{high}}{\text{low}} \rightsquigarrow \frac{\text{high upper}}{\text{low lower}}$$

1.2.2 Form 2:

$$a + x = b \tag{1}$$

$$x = b - a \tag{2}$$

2 Next Days Notes:

2.1 Boxes

I can create basic boxes for text like this . Notice that there's a 2in wide space with 'like this' in the middle of it.

If I want to put a box around the text, I can use a frame box. The result looks like this.

I can also justify the text to the right within a box like so or like so.

We can also use quick versions of these. We can just do this or this to create a quick box that's exactly the size of what we put in it.

2.2 Color

Color can be used to make a document much more attractive: **This could be very important text** **This could be something you need to remember**

Color names are: Apricot Aquamarine Bittersweet Black Blue BlueGreen BlueViolet BrickRed Brown BurntOrange CadetBlue CarnationPink Cerulean CornflowerBlue Cyan Dandelion DarkOrchid Emerald ForestGreen Fuchsia Goldenrod Gray Green GreenYellow JungleGreen Lavender LimeGreen Magenta Mahogany Maroon Melon MidnightBlue Mulberry NavyBlue OliveGreen Orange OrangeRed Orchid Peach Periwinkle PineGreen Plum ProcessBlue Purple RawSienna Red RedOrange RedViolet Rhodamine RoyalBlue RoyalPurple RubineRed Salmon SeaGreen Sepia SkyBlue SpringGreen Tan TealBlue Thistle Turquoise Violet VioletRed White WildStrawberry Yellow YellowGreen YellowOrange

Math and color?

$$\frac{x}{y}$$

$$\int_x e^x y$$