Starting LaTeX

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1 Learning Math

- $$

$$5 + 3 = 8$$

- equations

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

$$2 + 2 = 4 \tag{2}$$

Lets reference our first algebraic equation denoted by (1)

- align*

$$\begin{aligned} a + b &= c \\ g * f - 24 + 5 &= 37 \end{aligned}$$

- align

$$\begin{aligned} a + b &= c \\ b &= c - a \\ \frac{1}{b} * b &= \frac{c - a}{b} \end{aligned} \tag{3}$$

It follows from (3) that (1) is true.

2 The Heat Exchange Equation.

This derivation is by Bernd Schroder of Louisiana State.

$$-\iint_S \nabla \cdot \nabla u \cdot \mathrm{d}\vec{S} = -k\frac{\partial}{\partial t}\iiint_B u\,\mathrm{d}v \tag{4}$$

$$\iint_S \nabla u \cdot \mathrm{d}\vec{S} = \iiint_B k\frac{\partial u}{\partial t}\,\mathrm{d}V \tag{5}$$

$$\iiint_B \nabla \cdot \nabla u\,\mathrm{d}V = \iiint_B k\frac{\partial u}{\partial t}\mathrm{d}V \tag{6}$$

$$\lim_{a\to 0}\frac{1}{\frac{4}{3}\pi a^3}\iiint_B \nabla \cdot \nabla u\,\mathrm{d}V = \lim_{a\to 0}\frac{1}{\frac{4}{3}\pi a^3}\iiint_B k\frac{\partial u}{\partial t}\mathrm{d}V \tag{7}$$

$$\nabla \cdot \nabla u(\vec{r},t) = k\frac{\partial u}{\partial t}(\vec{r},t) \tag{8}$$

3 Matrices

$$\begin{pmatrix} a & b & c \\ d & e & f \\ g & h & i \end{pmatrix}$$

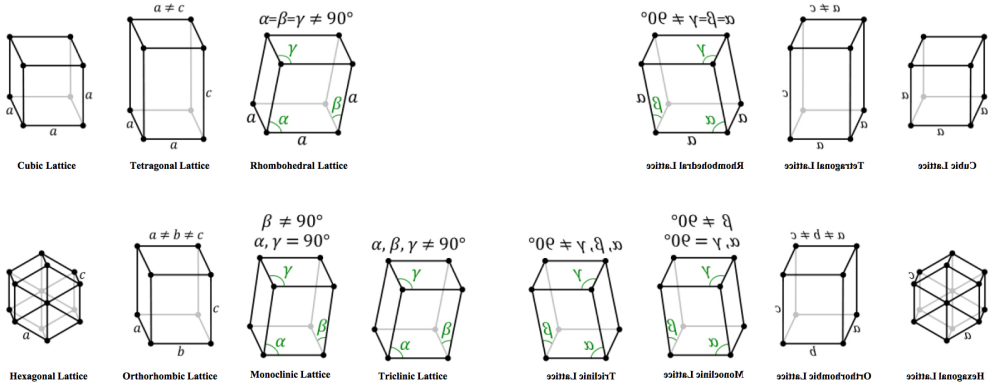
4 Table & Figure Example

In Table 1, you will find the list of class participatns.

Name	Department	Email
Luke Corwin	Physics	luke.corwin@sdsmt.edu
Michelle While	Physics	$\int e^x\,\mathrm{d}x = x$
Deb Bienert	MCS	1.53 ± 0.3
Tyler Liebsch	Physics	tyler.liebsch@mines.sdsmt.edu

Table 1: List of people in this class

Figure 1: Crystal Lattice Structures



In Figure 1, the difference in the crystalline structure can be seen.