## **Geometric Basics**

1. Chapter on geometry basics, a brush-up.
2. x2 = mx1 + c
3. In 2D: General form ax1 + bx2 + c = 0
   1. Consider a = 2, b = 1, c = -2
   2. The intercepts are 1 and 2
   3. Consider the point (1,2), plugging it into the equation gives us the value 2
   4. If ax1 + bx2 + c > 0 then it is above the line
   5. If ax1 + bx2 + c < 0 then it is below the line
   6. If ax1 + bx2 + c = 0 then it is on the line
4. In 3D: General form ax1 + bx2 + cx3 + d = 0
   1. If ax1 + bx2 + cx3 + d > 0 then it is above the line
   2. If ax1 + bx2 + cx3 + d < 0 then it is below the line
   3. If ax1 + bx2 + cx3 + d = 0 then it is on the line