**1.** If $a$ and $b$ are even integers, then so is $a + b$.

**Solution:**
Let $a$ and $b$ be even integers. Then there exist integers $j$ and $k$ such that $a = 2j$ and $b = 2k$. But then

$$a + b = 2j + 2k = 2(j + k). \tag{1}$$

Since $j + k \in \mathbb{Z}$, $a + b$ is even.

**2.** Plot $\sin(x)$ and $\cos(x)$ for $-\pi \leq x \leq \pi$ on the same graph. Make sure the graph is labeled nicely.

**Solution:**

```
octave:1> x=[-pi:0.01:pi];
octave:2> plot(x,sin(x),x,cos(x));
octave:3> set(gca, "fontsize", 14 )
octave:4> xlabel("x");ylabel("y");title("sin and cos");
octave:5> legend("sin","cos");
```