CO225 Lab 6

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1. We can define our own boolean type using variants.

```
type boolean = True | False
```

   (a) Define functions for the logical operations `implies` and `xor`.

   (b) Extend this type definition to three-valued logic.Define the **`and`** and **`or`** operations for this type.

2. In the lecture we saw the following types defined for use in a drawing program.

```
type point2d = { x:float; y:float }
type element =
| Circle of point2d * float (* centre coordinates and radius *)
| Line of point2d * point2d (* end-point coordinates *)
```

   (a) Write a `rotate` function that rotates an `element` by a given angle. You may use the function you wrote to rotate a coordinate in a previous lab.

   (b) Suppose we want to draw elements using various *styles*, which have the following attributes,

   - The "stroke" such as, Pencil, Brush, Crayon
   - An integer stroke width.
   - Stroke colour as defined by a variant type colour[1].

   Define a type `style` to store the attributes above. Modify the `element` type to have a style for each element.

[1] as in the lecture slides.