

**Show all your work!**

1. If  $f(x) = x^2 + 3x$ , write (and simplify) the expression for

$$\frac{f(x+h) - f(x)}{h}$$

2. Find the domain of  $f(x) = \sqrt{\frac{x^2-x}{x+2}}$

3. Find the values of  $x$  ( $0 \leq x < 2\pi$ ) so that

$$2 \sin(x) - \sqrt{3} = 0$$