

**6** The functions  $f$  and  $g$  are defined for  $-\frac{1}{2}\pi \leq x \leq \frac{1}{2}\pi$  by

$$f(x) = \frac{1}{2}x + \frac{1}{6}\pi,$$

$$g(x) = \cos x.$$

Solve the following equations for  $-\frac{1}{2}\pi \leq x \leq \frac{1}{2}\pi$ .

**(i)**  $gf(x) = 1$ , giving your answer in terms of  $\pi$ . [2]

**(ii)**  $fg(x) = 1$ , giving your answers correct to 2 decimal places. [4]