

**No Calculators Allowed**

1. Let  $f(x) = 3\sec(x) - 2$  and  $g(x) = 4$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of intersection of the graphs of  $f$  and  $g$  for  $0 \leq x < 2\pi$ ?

2. Let  $h(x) = 5 - 2\csc x$  and  $k(x) = 7$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of intersection of the graphs of  $h$  and  $k$  for  $0 \leq x < 2\pi$ ?

3. Let  $m(x) = 2 + \sqrt{3}\cot x$  and  $p(x) = 1$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of intersection of the graphs of  $m$  and  $p$  for  $0 \leq x < 2\pi$ ?

4. Let  $f(x) = 3\csc^2(x) - 1$  and  $g(x) = 3$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of intersection of the graphs of  $f$  and  $g$  for  $0 \leq x < 2\pi$ ?

5. Let  $h(x) = 5 + \sqrt{3}\sec x$  and  $k(x) = 3$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of intersection of the graphs of  $h$  and  $k$  for  $0 \leq x < 2\pi$ ?

6. Let  $m(x) = 3 + 5\sec^2 x$  and  $p(x) = 13$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of intersection of the graphs of  $m$  and  $p$  for  $0 \leq x < 2\pi$ ?

## Calculators Required



7. Let  $f(x) = 5.1 + 2.3\csc(0.4x - 2)$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of where  $f(x) = 2$  for  $0 \leq x < 2\pi$ ?



8. Let  $f(x) = 3.1 - 1.2\sec\left(\frac{\pi x}{6}\right)$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of where  $f(x) = -3$  for  $0 \leq x < 2\pi$ ?



9. Let  $f(x) = 3.5\cot(0.51x)$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the zeros of  $f(x)$  for  $0 \leq x < 2\pi$ ?



10. Let  $f(x) = 6.2 - 4.1\csc\left(\frac{\pi x}{4}\right)$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of where  $f(x) = 1$  for  $0 \leq x < \pi$ ?



11. Let  $f(x) = 2.1 + 2.7\sec(3 - 0.4x)$ . In the  $xy$ -plane, what are the  $x$ -coordinates of the points of where  $f(x) = -5$  for  $0 \leq x < 2\pi$ ?