

A1. Find the sum of the solutions to the equation  $x^2 - 3x = 4$ .

A2. Let  $k$  be the number you receive. Find the slope of the line passing through the two points  $(k, k + 6)$  and  $(2k + 2, k^2)$ .

A3. Let  $k$  be the number you receive. Simplify  $4 + \frac{3}{3 + \frac{k}{k+1}}$ .

A4. Let  $k$  be the number you receive. Find the area of the triangle with vertices  $(0,0)$ ,  $(k,0)$ , and  $(0, k-1)$ .

A5. Let  $k$  be the number you receive. Evaluate and simplify  $\frac{k-k^{-1}}{1+k^{-1}}$ .

B1. Solve the equation  $2^{k-8} = \frac{1}{8k}$

B2. Let  $k$  be the number you receive. Find the sum of the solutions to the equation  $|x - k| = 1$ .

B3. Let  $k$  be the number you receive. Find the area of a square with perimeter  $k$ .

B4. Let  $k$  be the number you receive. Find the remainder when  $x^3 + 4x^2 + 2$  is divided by  $x - k$ .

B5. Let  $k$  be the number you receive. Solve for  $x$ :  $(6x^{-1} + 5)^{-1} = \frac{1}{k}$

- C1. Find the value of  $k$  so that  $x^2 + 2x + k$  has two equal roots.
- C2. Let  $k$  be the number you receive. If a circle with center  $(k, 2)$  passes through the point  $(1, 4)$ , find the radius.
- C3. Let  $k$  be the number you receive. Let  $(a, 0)$  and  $(0, b)$  be the  $x$  and  $y$  intercepts of the line  $x + 2y = k$ . Evaluate  $a + b$ .
- C4. Let  $k$  be the number you receive. Find the positive solution  $x$  of  $x^2 - 1 - kx - k = 0$ .
- C5. Let  $k$  be the number you receive. Find the  $y$ -coordinate of the vertex of the parabola  $y = x^2 + kx + 9$ .

D1. Solve for  $x$ :  $\sqrt{2x - 6} - \sqrt{x} = 0$

D2. Let  $k$  be the number you receive. Find  $x$  if  $x > 0$  and  $(3x - 3)^2 - k^2 = 0$

D3. Let  $k$  be the number you receive from the front. Let  $m$  be the number you receive from the back. Solve for  $x$ :  $\frac{k}{x-1} + \frac{m}{x+1} = \frac{x+2}{x^2-1}$ .

D4. Let  $m$  be the number you receive from behind. Find the slope of the line going through the points  $(m,1)$  and  $(4,3)$ .

D5. Find the number of solutions in the real numbers to the equation  $x^4 - x = 0$ .