Work through the following problems and have your tutor check your solutions and record your name before the end of your Week 5 tutorial. You are encouraged to discuss these questions and your solutions with your peers and to ask your tutor for assistance. Working through ten sets of tutorial problems is compulsory and each of the ten problem sets will contribute 0.5% towards your final grade. Note that you earn the 0.5% for your effort in solving these problems during the tutorial rather than for answering all the problems correctly.

Once you have finished these problems, you can use the remainder of your tutorial time to work on other aspects of the course. Solutions to the tutorial problems will be distributed next week.

Make sure you have finished last week's questions.

1. Find z if $z = \sum_{i=-2}^{2} 5i^2$
2. Evaluate $\sum_{j=0}^{6} (-2)^j \, j$
3. Find x if $\sum_{i=3}^{4} xi = -7$
4. Find x if $\sum_{i=1}^{3} -3x = 0$
5. Write in summation notation: $\frac{6}{2} + \frac{6}{3} + \frac{6}{4} + \frac{6}{5}$
6. Write in summation notation: $x^2 + 4x^3 + 9x^4 + 16x^5 + ...$
7. Does the line $9y = 81 + 27x$ pass through the point $(5, -9)$?
8. Given the linear equation $-4x + 4 = 0$:
   (a) Find the y-intercept of the line.
   (b) Find the x-intercept of the line.
   (c) Sketch the graph of the line.
9. Find the gradient and y-intercept of the line $0 = 9y - 8x$.
10. Find the gradient and y-intercept of the line $3x - 5 - 2y = -5y - 3x$.
11. Find the equation of the straight line passing through the points $(-6, 0)$ and $(-5, 10)$.
12. Find the equation of the straight line with gradient $m = 1$ passing through the point $(2, 0)$.
13. Find the equation of the line parallel to $4x - 7 + y = -51 + 15x - 10y$ and passing through the point $(-8, -1)$.

(continued over...)

14. Find the equation of the line perpendicular to $4y + 8 = 12x$ and passing through the point $(-24, 4)$.

15. Find the equation of the line parallel to $35 = -7y$ and passing through the point $(0, 9)$.

16. Find the equation of the line parallel to $-8x = -6$ and passing through the point $(-5, 8)$.

17. Find the equation of the line perpendicular to $-63 = -7y$ and passing through the point $(2, -7)$.

18. Find the equation of the line perpendicular to $0 = -2x - 1$ and passing through the point $(-9, 4)$.