Work through the following problems and have your tutor check your solutions and record your name before the end of your Week 8 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. Solve each of the following equations **without** using the quadratic formula:
   (a) $6x\left(-6+7x\right)=0$
   (b) $\left(-2+y\right)\left(-8y+3\right)=0$
   (c) $2\left(-3z+3\right)\left(8z-7\right)=0$
   (d) $\left(-8-7x\right)^{9}=0$
2. Solve $6y\left(-5y-6\right)=0$.
3. Find $f(-8)$ where $f\left(x\right)=x^{2}+3x-1$.
4. Solve $5z^{2}-35z+60=0$.
5. Given the quadratic equation $y=2x^{2}+20x$:
   (a) Find the roots of y.
   (b) Find the y-intercept of the quadratic.
   (c) Sketch the graph of the quadratic.
6. If \$400 is invested for 6 years at a rate of 6.0% per annum, find the final balance if interest compounds:
   (a) annually?
   (b) every six months?
   (c) quarterly?
   (d) monthly?
   (e) continuously?

(continued over...)

7. There are eight equations given in this question and you need to match each equation with its corresponding graph. The graphs are shown in Figure 1.

   (a) $y = -4 \times |-4x|$

   (b) $-12y = -13y + 1$

   (c) $7y + 3x - 15 = -7x - 16$

   (d) $y = e^{7x}$

   (e) $-11y + 3 = 15x^2 - 8$

   (f) $2y + 4x^2 - 13 = 8y + 7x^2 - 13$

   (g) $3y - 2x^2 - 12 = 2y + 6$

   (h) $-5y = -15y - 5x$

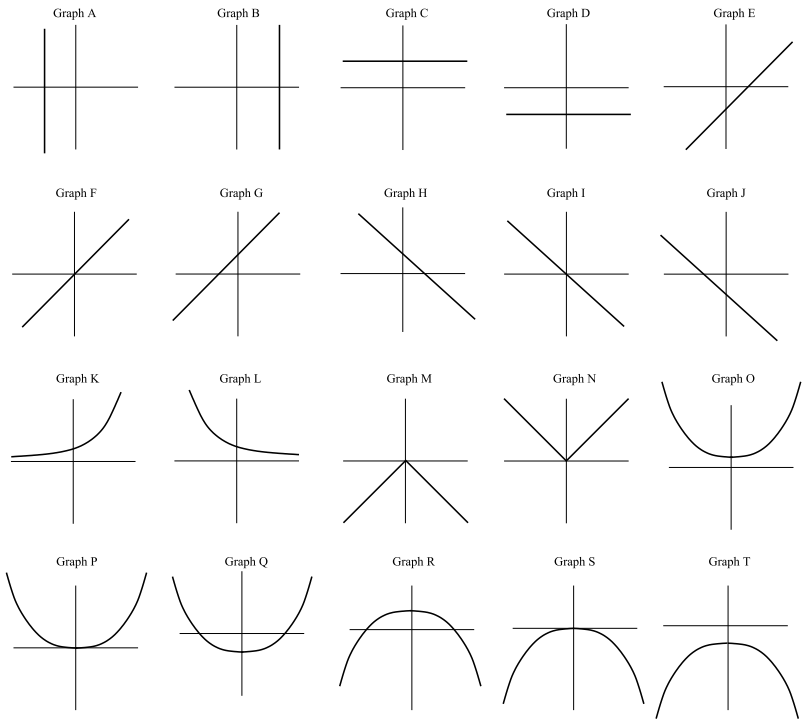

Figure 1: Graphs of various equations.