

Work through the following problems and have your tutor check your solutions and record your name before the end of your Week 10 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.**

- 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.

- $y = e^{7x}$
- $-8y + 9x^2 = -16y + 15x^2$
- $-13y + 9 = -3y - 15$
- $-8y + 12x = -6y + 14x$
- $3x - 13 = -7x + 3$
- $-3y + 9x^2 - 14 = 6x^2 - 15$
- $-2y - 2x + 11 = 13y - 6x + 11$
- $y = e^{-3x}$

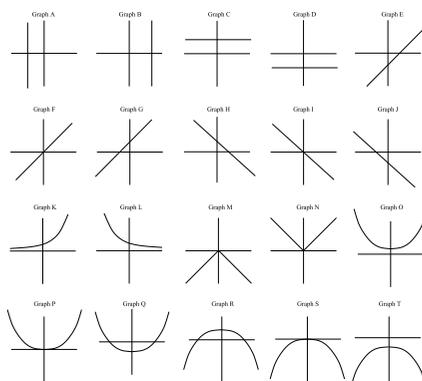


Figure 1: Graphs of various equations.

2. Convert each of the following angles from degrees to radians:

$$198^\circ \quad 81^\circ \quad 90^\circ \quad -105^\circ \quad 450^\circ \quad 12^\circ \quad -320^\circ \quad 420^\circ$$

3. Convert each of the following angles from radians to degrees:

$$-\frac{11\pi}{10} \quad -\frac{5\pi}{3} \quad \frac{5\pi}{3} \quad \frac{7\pi}{10} \quad \frac{\pi}{6} \quad 4\pi \quad 6\pi \quad \frac{13\pi}{5}$$

4. A ladder is placed up against a wall at an angle of elevation of  $30^\circ$ . If the ladder is  $2m$  away from the base of the wall, how long is it? How far up the wall does the ladder reach?

5. Given the quadratic equation  $y = 4x^2 + 36x$ :

(a) Find the roots of  $y$ .

(b) Find the  $y$ -intercept of the quadratic.

(c) Sketch the graph of the quadratic.