

AUDL 1001
Diagnostic Test of Basic Skills

These questions are NOT part of any formal assessment. The purpose of this test is to inform the lecturers of the basic maths and physics standard of the class. Do as much as you can. The test will be stopped after about 20 min. Move on if you are unable to answer a question.

NAME _____ **COURSE** _____

1) Basic maths formula manipulation

- a) if $a = 2b/c$ $c =$ _____
- b) if $x = 1+3y^3$ and $y=2$ $x =$ _____
- c) if $ax + bx = c-1$ $x =$ _____
- d) if $x = 10^y$ and $y = 2$ $x =$ _____
- e) if $x = \log_{10}(y)$ and $x=2$ $y =$ _____
- f) if $p = s (qr/2)^{1/2}$ $r =$ _____
- g) if $x = 10^2/10^3$ $x =$ _____
- h) if $3 = x \cdot 10^{-3}$ $x =$ _____
- i) if $10^4 \cdot 10^3 = 10^x$ $x =$ _____

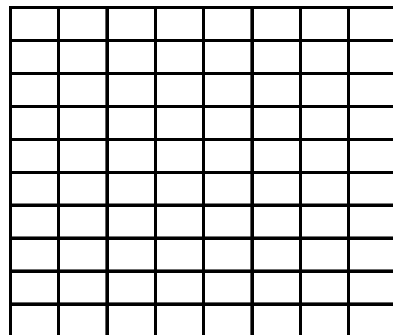
2) Trigonometry

- a) How many degrees are in a right angle?
- b) How many radians does this correspond to?
- c) How many degrees are equivalent to a radian value of $\pi/4$?

3) Basics graphics

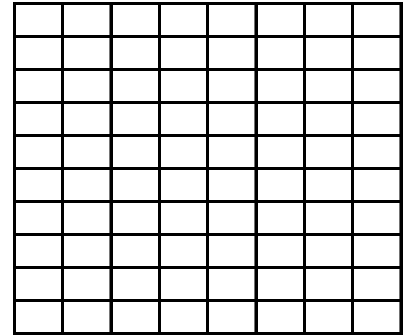
- a) Sketch and label a graph of the equation :

$$y = 2x+1, \text{ for } x= 1 \text{ to } 6$$



b) Sketch and label a graph of the equation :

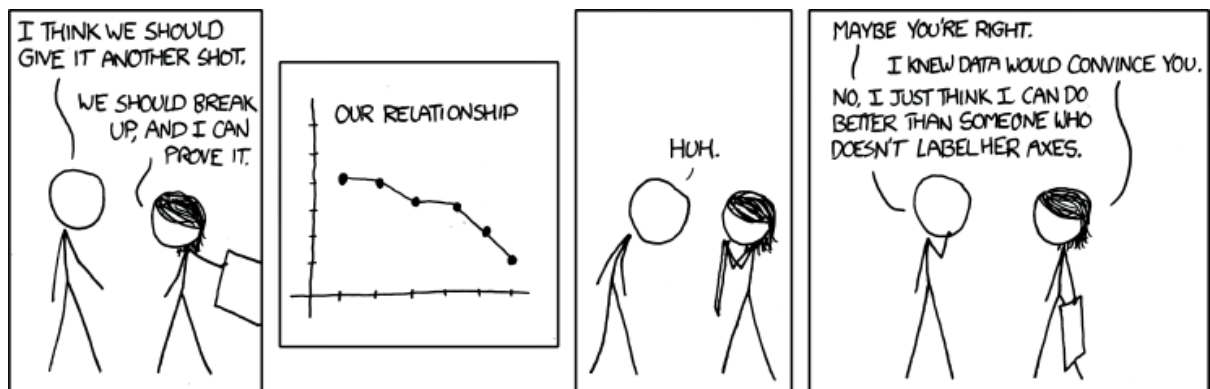
$$y = x^2, \text{ for } x = 0 \text{ to } 3$$



4) Basic physics of sound

- a) The speed of sound is 340m/s. What distance does sound travel in 0.5 seconds? _____
- b) Write down the equation relating distance d , to speed s , and time t . $d =$ _____
- c) A guitar string vibrates at 500 oscillations/second. The time for each oscillation is = _____
- d) A periodic waveform repeats every 0.5 ms. What is its frequency? _____

And some people say graphs are no use in everyday life ...



<http://xkcd.com/833/>