

GRAPHS – WORKSHEET #1

COURSE/LEVEL

NSW Secondary High School Year 12 HSC Mathematics Extension 2.

TOPIC

Graphs: Drawing graphs by addition and subtraction of ordinates. (Syllabus Ref: 1.2)
Drawing graphs by reflecting functions in coordinate axes. (Syllabus Ref: 1.3)

- graph a function $y = f(x) \pm c$ by initially graphing $y = f(x)$,
- graph a function $y = f(x) \pm g(x)$ by initially graphing $y = f(x)$ and $y = g(x)$.

- $y = 1 + 3\sin 2x$ for $-2\pi \leq x \leq 2\pi$
- $y = x + 3\sin 2x$ for $-2\pi \leq x \leq 2\pi$
- $y = \cos^{-1} x - \pi$
- $y = 3\sin x + x$ for $0 \leq x \leq 4\pi$
- $y = \sin x + \cos x$ for $-2\pi \leq x \leq 2\pi$
- $y = 2\sin x + 3\cos 2x$
- $y = |x+1| + |x-2|$
- $y = |x-3| + |5-x| + 1$
- $y = |x+2| + |2x-5|$
- $y = |x| + |x+1| + |x-2|$
- $y = x + e^x$
- $y = x + e^{-x}$
- $y = 1 - \ln x$
- $y = x - \ln x$
- $y = \ln x + \frac{1}{x}$
- $y = \frac{1}{x} - \ln x$
- $y = e^x + e^{-x}$
- $y = e^x - e^{-x}$
- $y = \sqrt{x+1} + \sqrt{1-x}$
- $y = \sqrt{x-1} - \sqrt{3-x}$

- graph $y = -f(x)$ by initially graphing $y = f(x)$
- graph $y = |f(x)|$ by initially graphing $y = f(x)$
- graph $y = f(-x)$ by initially graphing $y = f(x)$

- $y = \ln x, y = -\ln x$
- $y = \ln x, y = 2 + \ln x^{-1}$
- $y = x(x-1)(x+2), y = x(1-x)(x+2)$
- $y = (x-1)^3, y = (1-x)^3$
- $y = x^2 - 3x + 2, y = |x^2 - 3x + 2|$
- $y = x(x^2 - 1), y = |x(x^2 - 1)|$
- $y = \cos x, y = |\cos x|$
- $y = 1 - \cos x, y = |1 - \cos x|$
- $y = \frac{1}{x}, y = \frac{1}{|x|}$
- $y = \frac{1}{x-2}, y = \frac{1}{|x-2|} + 1$