

Maple Workshops F7.1SC3, 2007
Assessment 1 (Week 2) (24.4)

Try all questions on the assessment. At the end of the class print out your worksheet and hand it in. **Layout your worksheet neatly and clearly number each answer.**

The worksheet you hand in at the end of the class should have the following information on it at the top:

Maple Assessment 1 (24.4)

Your full name

Your department

1. First assign the expression, and then find the floating point approximation of

$$3! \sin(2\pi\sqrt{7})$$

correct to first 7 and then 14 significant figures.

2. Find the coefficient of the term in x^7 and the term independent of x in the expansion of

$$\left(x^2 - \frac{1}{2x^5}\right)^7.$$

3. Given the complex numbers $z = 2 - 3i$ and $w = 1 - 5i$ find zw and determine the argument and modulus of zw to 7 significant figures.

4. Find all of the solutions of

$$y^5 = 3$$

giving your answers in Cartesian form $a + ib$ to 3 significant figures.

5. (a) Plot the functions $10 \cos(x)$ and e^x on the same graph. By varying (if necessary) the interval for plotting determine approximately the intervals within which lie the two (!) solutions of the equation $10 \cos(x) = e^x$.

- (b) Using the intervals read off from the plot find the numerical solutions of $10 \cos(x) = e^x$

6. On a single graph plot

(a) $\cos(x)$ using a red line of thickness 2, and

(b) $\sin(x)$ using a blue line of thickness 3

in the range $-3\pi \leq x \leq 3\pi$.