BSc Software Design (Game & Web) Year 1
Tutorial 1

Laws of precedence

Evaluate each of the following:

(i) $(2+7(14-7\times 2))+9$

(ii) $15\times\sqrt{(12^2+25)}-2+8/7$

(iii) $\dfrac{3/7+5}{8}-4$

(iv) $\left(11-5(2+(13+2)^2/5)\right)$

(v) $(3\le 5)\vee(-8>1)$

For each of the following $x=2, y=-5, z=3, u=1, v=0$

(vi) $(x+y+z=u\times v)\wedge(z>y/z)$

(vii) $\neg(xz+y>v)\vee(x=z+u)$

Fractions

Express as a fraction (improper if appropriate):

(i) $\dfrac{4}{7}\left(\dfrac{2}{11}+\dfrac{9}{-2}\right)-2$

(ii) $\dfrac{\left(2-\dfrac{8}{3}\times 5\right)}{1/3}$

(iii) $\dfrac{3/8}{2/9}\left(1-7\dfrac{1}{3}\times 11\right)$

(iv) $19+1/11-\dfrac{3}{13}$

(v) $\dfrac{1}{7}\left(9+7\cdot\dfrac{1}{2}-3\times\dfrac{23}{11}\right)$

Functions of a real variable

Evaluate the functions below at the specified values:

(i) $f(x) = 4x^2 - 8x - 9; \quad x = -2$

(ii) $f(x) = -x^3 + 9x; \quad x = 3$

(iii) $f(x) = \dfrac{x}{x^2 - 4}; \quad x = -2$

(iv) $f(x) = \dfrac{x^6 - 1}{x^5 + x^4 + x^3 + x^2 + x + 1}; \quad x = 2$

(v) $f(x) = \dfrac{-6}{2x - 3}; \quad x = 3$

Evaluation of expressions

Give an approximation (ball park figure) for each of the following:

(i) $\dfrac{63.1212234}{7.213344}$

(ii) $\dfrac{80.97565}{8.993} - 6.9999924$

(iii) $\sqrt{625.00001452} \times 12.0002345$

(iv) $\dfrac{9.9345234}{\sqrt{99.92454234}} \times 9.551$

(v) $\sqrt[4]{256.1098454} \times \dfrac{4.0000546345}{9.999975876}$