All questions should be submitted by 2pm on Thursday 13 December. Assignments can be submitted at your tutorial or to the MATH1040 assignment box (3rd floor, Priestley Building). **Make sure that your name, student number and assignment number are on each sheet of your answers.** Write your answers on a separate sheet of paper. You do not need a cover sheet nor do you need to include this question sheet. Solutions will be distributed in class later.

1. Solve $\dfrac{2(x-3)}{7}+5=9$

2. Solve $|-2x+6|=2$

3. Find all x which satisfy $5x+2>3x-4$. Write your answer in interval format and mark it on a real line.

4. Simplify a) $\sqrt{40}$ b) $2\sqrt{3}\times 4\sqrt{6}$

5. Simplify a) $x^5y^3\times x^4y^2\div(x^6y^4)$ b) $(p^2q^3)^2\times p^4q^2\div(pq)^8\times p^0$

6. Evaluate each of the following:

   a) $(-2)^4$ b) -3^4 c) 2^{-4} d) $(-2)^{-3}$

   e) x^2+x where x is -2 f) $-(x^2)+x$ where x is -2

7. Solve $\displaystyle\sum_{i=-1}^{3}(ix+3)=5$

8. Write each of the following in summation notation:

   a) $2h+4h+6h+8h+10h$

   b) $\dfrac{-4}{5}+\dfrac{-4}{6}+\dfrac{-4}{7}+\dfrac{-4}{8}$

9. Wally ran x laps of the running track on Oval Number 5. Wayne ran 8 more laps than Wally. Together they ran a total of 46 laps. Write an equation and find out how many laps each person ran.

10. Two books have a total of 390 pages. The number of pages in one book is 40 more than four times the number of pages in the other. How many pages are there in each book?

11. Choose three consecutive numbers, e.g. 5, 6, 7. Square the middle number: $6^2=36$. Multiply the other two numbers: $5\times 7=35$. Subtract these results: $36-35=1$! Does this always work? Prove <u>your results using algebra,</u> not by testing particular numbers. (Hint: let the middle number be n.)

Ensure that your name, student number and assignment number are on each sheet of your answers.