

## 34A - REVIEW SHEET

### Exercise 1.

Solve for  $x$ :

$$\frac{x^2 - 1}{x} = k$$

### Exercise 2.

Solve for  $x$  and  $y$ :

$$\begin{cases} 2x + y = 3 \\ x - y = b \end{cases}$$

### Exercise 3.

Line  $B$  has equation  $y = 3x + 4$ . Line  $A$  has twice the slope as line  $B$  and passes through the point  $(3, -1)$ . Find the equation of line  $A$  and draw a diagram.

### Exercise 4.

Two trains are travelling in the same direction, both starting from New York. The first one leaves New York at 8 am with a constant speed of 40 miles per hour. The second one leaves one hour later and with a constant speed of 70 miles per hour. After how many minutes, would the second train reach the first one?

Draw a diagram representing the position of the two trains at time  $t$ .

### Exercise 5.

You want to build a rectangular box with a volume of 100 cubic feet and with a base of 10 square feet. Express the surface area of the box in terms of the length of one of the sides and sketch its graph.

### Exercise 6. Solve for $x$

a)  $\log(9 + x) = 3a$

b)  $2^{\frac{1}{x}} = 6 + b$

c)  $\log(x^3) - \log(x^5) = 10$ .

**Exercise 7.**

On Friday morning the stock  $A$  increased its value by 10% each hour continuously. If its value at 8am was 30\$, after how many minutes did its value reach 40\$?