

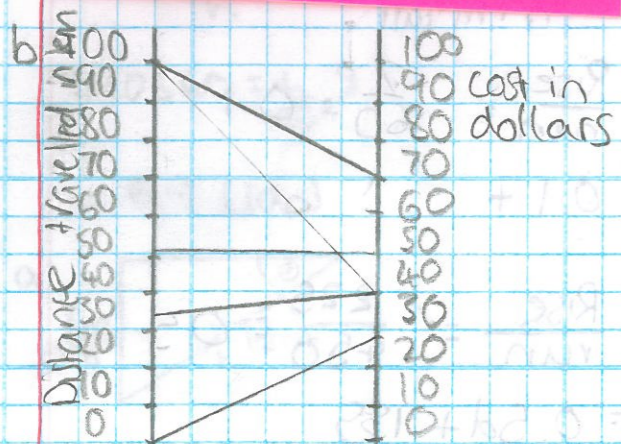
Algebra Everywhere
- with rigour!

Examples of year 10 work where good algebraic habits ensure success.

Year 10 Linear Graph work is rich with Algebraic Concepts

- Mapping
- Do we graph with (N or W or II) or with (R)?
- equalities or inequalities
- Functions as generalisations or as looking for solutions

#21
a



$$100 \text{ km} \times 0.4 + \$30 = \$70$$

$$25 \text{ km} \times 0.4 + \$30 = \$40$$

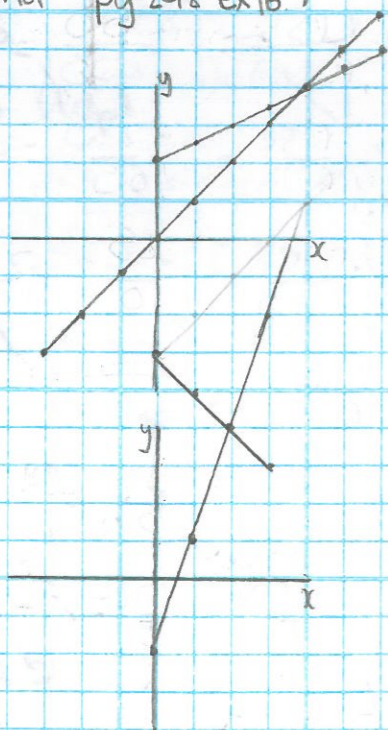
$$0 \text{ km} \times 0.4 + \$30 = \$30$$

$$c \quad 5r = 150 + 2k = r = 30 + 0.4k$$

Green Gamma pg 298 Ex 167
8/6/11

1. $y = x$
 $y = \frac{1}{2}x + 2$

$(4, 4) \checkmark$

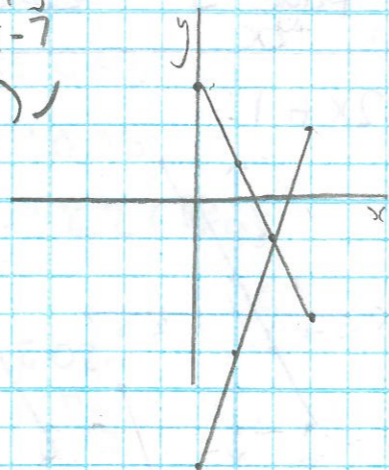


2. $y = 3x - 2$
 $y = x + 6$

$(2, 4) \checkmark$

4. $y = -2x + 3$
 $y = 3x - 7$

$(2, -1) \checkmark$



5. $y = x + 1$
 $y = -x + 3$

$$|x + 1| = -|x + 3|$$

$$|x| = -|x + 2|$$

$$+|x| \quad +|x|$$

$$2x = 2$$

$$\div 2 \quad \div 2$$

$$x = 1$$

$$|1 + 1| = 2$$

$$-|1 + 3| = 2$$

$(1, 2) \checkmark$

6. $x + y = 5$
 $y = x - 3$

$$x + x - 3 = 5$$

$$2x - 3 = 5$$

$$+3 \quad +3$$

$$2x = 8$$

$$\div 2 \quad \div 2$$

$$x = 4$$

$$y = 4 - 3 = 1$$

$(4, 1) \checkmark$

7. $y = -2x$
 $y = 4x + 6$

$$-2x = 4x + 6$$

$$+2x \quad +2x$$

$$x = 6x + 6$$

$$-6x \quad -6x$$

$$-5x = 6$$

$$\frac{-5x}{5} = \frac{6}{5}$$

$$x = 1.2$$

$$y = 4 \times 1.2 + 6 = 10.8$$

$(1.2, 10.8) \times (-1, 2) \checkmark$

8. $y = 10x - 11$
 $y = -9x + 8$

$$10x - 11 = 9x + 8$$

$$-11 \quad +11$$

$$10x = 9x + 19$$

$$-9x \quad -9x$$

$$\frac{1x}{1} = \frac{19}{1}$$

$$x = 19$$

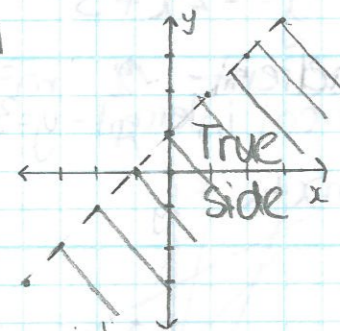
$$y = -9 \times 19 + 8$$

$$y = -171 + 8$$

$y = 163 \quad (19, 163) \times (1, -1) \checkmark$

Green X 10-6-11
pg 183 ex 10.8

1. $y < x + 1$



test a point:

$(0, 0)$

$x = 0$

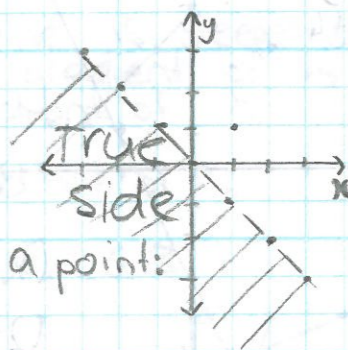
$y = 0$

$y < x + 1$

$0 < 0 + 1$

True

5. $x < -1$



Test a point:

$(1, 1)$

$x = 1$

$y = 1$

$x < -1$

$1 < -1$

False

12. $y \leq -x + 1$

test a point:

$(0, 0)$

$x = 0$

$y = 0$

$y \leq -x + 1$

$0 \leq -0 + 1$

True

