**Linear Relations Lesson #8**

How can we **solve problems** using **graphs**, **tables** and **equations**?

1. Consider the graph for cost of using two companies to rent a riding lawnmower.

a) When do both companies’

lines **intersect**? ( , )

b) What does the **intersection**

**point represent**?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

c) Which company has a **higher**

**rate of change**? How can you tell?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

d) Which company has a **lower initial**

**charge**? How can you tell? \_\_\_\_\_\_\_\_\_

e) Consider the company with initial charge of $30, **what will be the cost after 3 days? \_\_\_\_\_\_\_**

f) Consider the company with initial charge of $50, **when will the cost be $130**?

2. Consider the graph of two people walking.

a) Which of the lines show a **negative rate of**

**change**? \_\_\_\_\_\_\_\_\_ **How can you tell**?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

b) When will the two people meet and pass

each other? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. The following formula, describes Blaise’s bank balance, B, in $ over time in weeks, w.

B = 40w + 200

1. How much money did Blaise **start off with** in the bank? \_\_\_\_\_\_\_\_\_
2. How much money does he **add each week**? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. How much money does he have **after 5 weeks**?
4. **When will he have** **$640** in the bank?

4. The following formula, describes Consolacion’s distance from home, D, in km over time in minutes, m.

D = - 0.25m + 7

1. How far from home was Consolacion **at the beginning**? \_\_\_\_\_
2. Does she walk **towards home** or **away from home**? \_\_\_\_\_\_\_\_\_\_
3. How can you tell her direction? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How **fast** is she walking? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. **How far** from home will she be **after 5 minutes**?
6. **When** will she be **3.5km from home**?

|  |  |
| --- | --- |
| Distance, d, in km | Cost, C, in $ |
| 4 | 7 |
| 8 | 9 |
| 12 | 11 |
| 16 | 13 |

5. Below is a table that shows the cost of a taxi, C, in dollars over distance, d, in km.

1. What is the **initial cost**? \_\_\_\_\_\_\_\_\_\_
2. What is the **cost per km**? \_\_\_\_\_\_\_\_\_
3. What will be the **cost to go 24 km**?
4. **How far** can you go for **$15**?
5. What is the **cost to go 27km**?