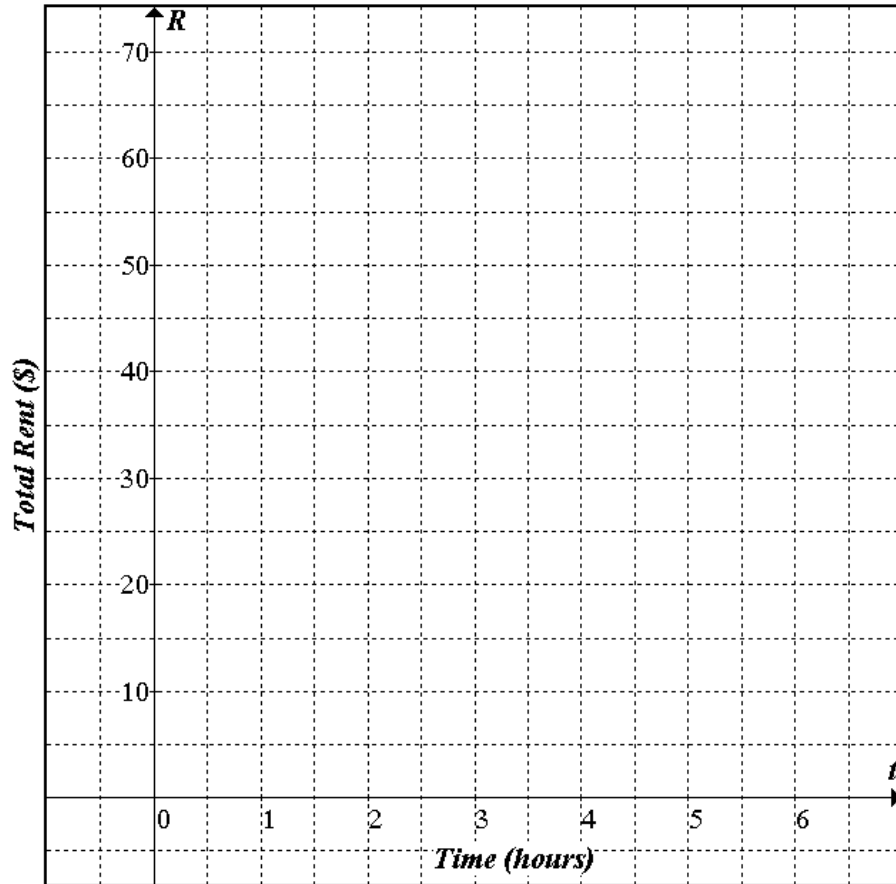


Mathematics 9
Break-Even Problems

Date: _____

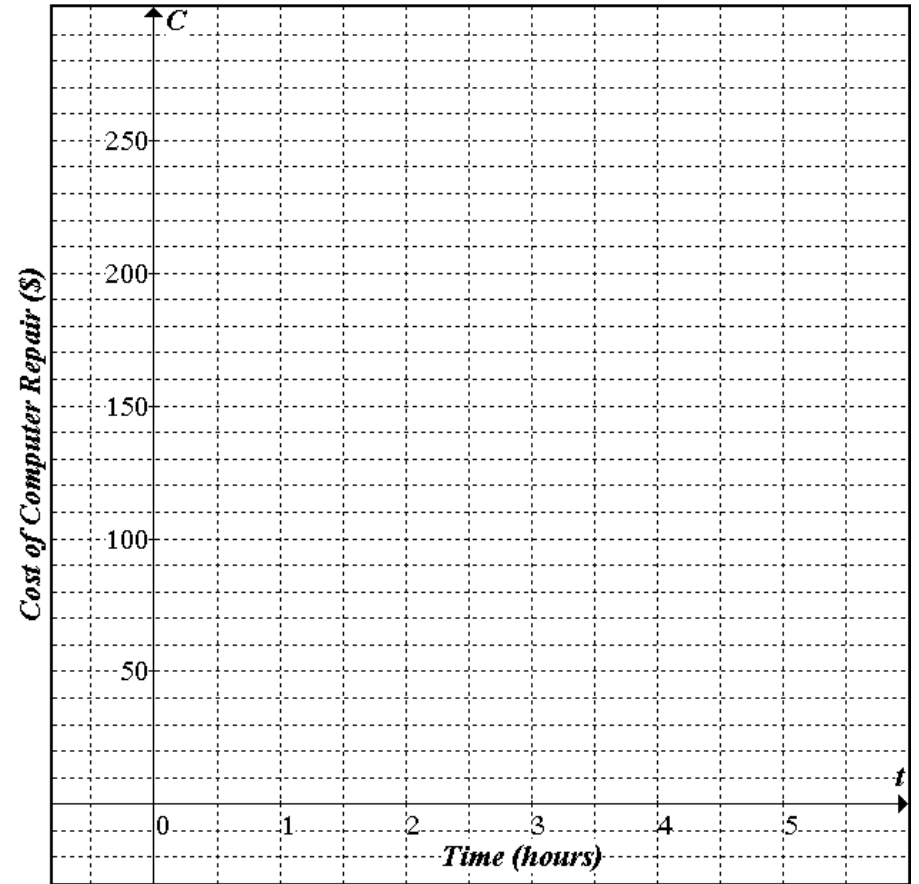
Graph all given lines on the grids below using slope & y-intercept, or tables of values in your notes. Answer all questions in your notebooks.

Saw Rental Cost



1. Joe's Rental charges rent for a table saw as given by: $R = 10t + 10$
 Rent-it-all charges rent for a table saw as given by: $R = 5t + 30$
 - a) Graph both lines on the above grid. **Label each line with the rental store's name.**
 - b) If renting a saw for 5 hours, which store is the best choice for the rental and how much is saved by renting there?
 - c) At what time and rental cost are the two stores equal? **This is called the "break-even point" on the graph.**

Comparison of Computer Stores

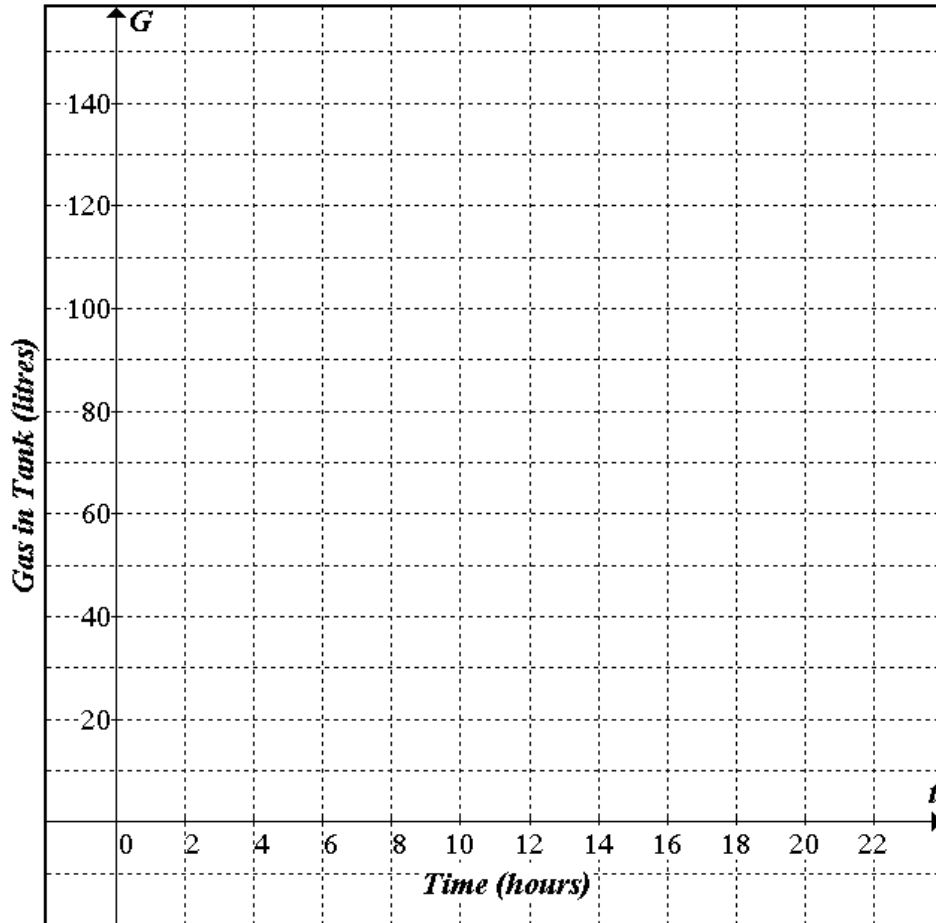


2. Greg's computer is down again. The three neighbourhood repair shops have changed their prices. Compu-Shoppe now charges a base price of \$20 plus \$40 per hour. Compu-World charges \$80 plus \$20 per hour. Compu-Fixit charges \$60 per hour.
 - a) Graph all lines and label each line with words **and** with its equation.
 - b) What is the best and worst choice for a 2.5 hour repair? How much money is saved by choosing the best?
 - c) Describe **in detail** how Compu-World's prices compare to the other stores.

Mathematics 9
Break-Even Problems

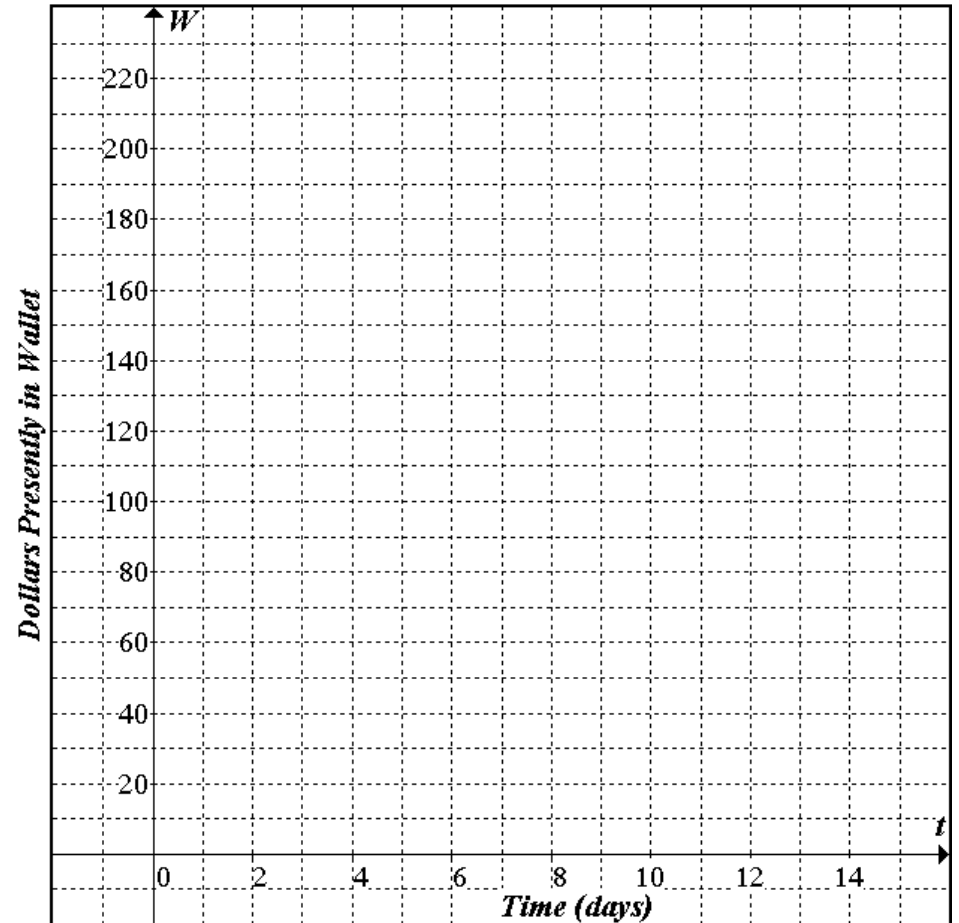
Date: _____

Amount Remaining in Gas Tank



3. Two vehicles are driving across Canada. A Hummer starts with a full 120 litre gas tank and uses 8 litres per hour. A Pontiac Vibe starts with a full 60 litre tank and uses 3 litres per hour.
- Graph all lines and label each line with words ***and*** with its equation.
 - Estimate the coordinates of the ***break-even point*** when both vehicles have equal amounts of gas left in their tanks.
 - Use the equations from (a) to check your answer to (b).
 - When does each of the vehicles run out of gas?

Jack and Jill's Savings



4. Jack begins with \$210 in his wallet and he spends \$15 per day. Jill begins with \$70, but she saves \$10 per day and adds it to the money in her wallet.
- Graph all lines and label each line with words ***and*** with its equation.
 - Estimate the coordinates of the break-even point when Jack and Jill have equal amounts of money. *Hint: it is ***not*** on a grid point—you must estimate!*
 - Use the equations from (a) to check your answer to (b).
 - How much money will Jill have at the time that Jack has none left?