

Sharon needs to move tomorrow for her new job. She rents a U-Haul truck to move her belongings. It costs \$30 to rent the truck she needs, plus \$0.50 per mile to rent the truck she needs. Let $P(m)$ be the price of renting the truck and driving it for m miles.

1. Write the symbolic form for $P(m)$.
2. Sharon has budgeted \$200 for the truck rental. How many miles can she drive on her budget? To find the answer, solve for m such that $P(m) \leq 200$. Represent your answer in Set Notation.
3. Sharon wanted to save money, so she went online to find alternate truck rental companies. She found that Freddy's garage can rent her a truck for a flat rate of \$100. So, she wants to compare under what conditions it will be cheaper for her to rent from U-Haul versus Freddy's garage. Solve for m such that $P(m) < 100$ to find the answer. Represent your answer in set notation.
4. Sharon computes the distance she will need to drive during the move. She determines that she will drive 120 miles. Should she rent from U-Haul or from Freddy's garage? Explain your answer.

You just bought a new phone and need to choose a texting plan. Plan A charges a monthly fee of \$5.00 plus \$.10 per text. Plan B charges a monthly fee of \$10.00 plus \$.05 per text.

1. Let $A(t)$ be the cost of plan A if t texts are used. Write the symbolic form for $A(t)$ below.

2. Let $B(t)$ be the cost of plan B if t texts are used. Write the symbolic form for $B(t)$ below.

3. When will plan A be cheaper than plan B? Figure this out by solving when $A(t) < B(t)$.

4. You are pretty sure that you will use at least 200 texts per month. Which plan should you go with? Explain your answer.

5. Your sister is also trying to choose a texting plan. Your parents, though, will pay at most \$20 for her texting plan. If your sister goes with plan A, how many minutes can she use without going past the \$20 limit? Answer this by solving when $A(t) \leq 20$.