

1. Ruth is twice as old as Jan will be 5 years from now. Let R and J denote Ruth's and Jan's ages now and rewrite the first sentence as an equation relating R and J .
2. Joe has a certain number of marbles, and Sam has three less than five times as many marbles as Joe. Let J and S denote the number of marbles Joe and Sam have and rewrite the first sentence as an equation relating S and J .
3. If Ralph does a job in five days and Waldo does the same job in four days what part of the job is done by each in one day?
4. If Ralph and Waldo of problem 3 work together without interfering with each other what part of the job is done in one day?
5. From your result in problem 4 determine how soon the job will be done when Ralph and Waldo work together.
6. Sam carries a sack of apples weighing 45 pounds and Lou carries a sack of apples weighing 25 pounds. An amount R of apples is removed from Sam's sack and put into Lou's sack. In terms of R what are the weights now being carried by Sam and Lou?
7. In problem 6 if the weight carried by Lou is to be two thirds of the weight carried by Sam what was the weight of apples transferred from Sam to Lou?
8. Sally has twice as much money as her twin brother Sully. Sally gives Sully enough of her money so that now both have the same amount. What percent of Sally's money was given to Sully?
9. A car rental agency offers two options

option 1 \$60 per day, 100 free miles, 50¢ per mile over 100.

option 2 \$40 per day, no free miles, 25¢ per mile.

- (a) Let M denote the number of miles traveled per day. Express the cost of each option per day in term of M .
- (b) Which option should be chosen if trip is 50 miles and is done in one day?
- (c) Which option should be chosen if trip is 85 miles and is done in one day?
- (d) Which option should be chosen if trip is 300 miles and is done in one day?
- (e) Are there any daily mileages for a one day trip for which cost of option 1 and option 2 are equal? What are these mileages?