In the word problem below, define an appropriate variable, create an equation, and solve that equation by showing your work. Also, give a summary statement at the end of the problem.

Suppose that when Isaac Heating Company makes a night or weekend call to a customer, there is a base charge of $50 plus $45 per hour for labor.

Suppose that when Betlem Heating Company makes a night or weekend call to a customer, there is a base charge of $25 plus $55 per hour for labor.

a. What is the equation for the cost, C, of an Isaac repair job lasting x hours?

b. What is the equation for the cost, C, of a Betlem repair job lasting x hours?

c. How many hours would the repair take if the cost for both companies is the same?

d. How much will Isaac charge for a job lasting 5 hours?

e. How much will Betlem charge for a job lasting 5 hours?

f. How much will Isaac charge for a job lasting 1.5 hours?

g. How much will Betlem charge for a job lasting 1.5 hours?
a. $C = 50 + 45x$

b. $C = 25 + 55x$

c. In order that the cost are the same we must write:

$$50 + 45x = 25 + 55x$$

Solving this equation for $x$ gives $x = 2.5$ hours

d. $C = 50 + 45(5) = $275$

e. $C = 25 + 55(5) = $300$

f. $C = 50 + 45(1.5) = $117.50$

g. $C = 25 + 55(1.5) = $107.50$