**Babysitting Activity (Key)**

Dianna is saving up her money to buy a skateboard that costs $74.00. She already has $20.00 from her birthday, and she is planning to do some babysitting to earn the rest.

1. If Dianna charges $6.00 per hour, how many hours does she need to babysit to have enough money for the skateboard? (*Note: She is buying it online so there is no sales tax. The shipping cost is free for purchases over $50.00.)*
   1. Represent the situation as an **equation** involving the variable *x*.

6*x* + 20 = 74

* 1. Solve the **equation** for x.

*x* = 9

* 1. Since Dianna needs *at least* $74.00, represent the above situation as an **inequality** involving the variable x.

6*x* + 20 ≥ 74

*x* ≥ 9

* 1. Discuss with your group the similarities and differences in the above representations, solution techniques, and solutions

The **equation** representation tells us that in order for Dianna to make **exactly** $74, she will need to babysit **exactly** 9 hours.

The **inequality** representation tells us that in order for Dianna to make **at least** $74, she will need to babysit **at least** 9 hours.

1. Maya also earns money babysitting. She works the same number of hours per week as Dianna, but she has more experience, so she charges $8.00 per hour. Unlike Dianna, Maya does not have any birthday money saved up. After how many hours of babysitting will Dianna and Maya have the same amount of money?

10 hours

1. For what values of *x* (or the number of hours worked) will Maya have more money than Dianna? Less money? Represent these situations as **inequalities**.

8*x* > 6x + 20; *x* > 10 (more than ten hours)

8*x* < 6x + 20; *x* < 10 (less than ten hours)