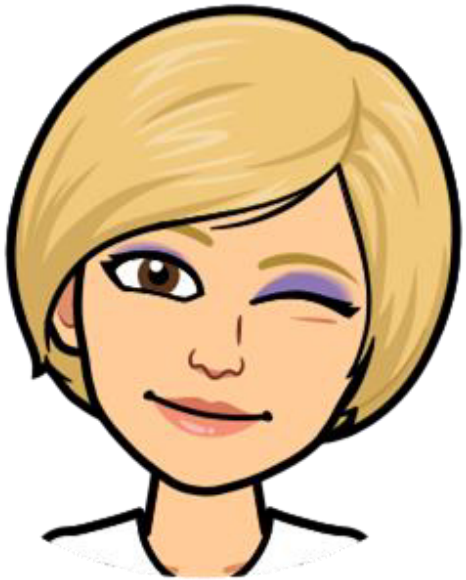
Today's Materials



- (device)
- calculator
- pencil
- notebook
- glue
- ruler

Two Graphs for Each Relationship

Lesson 13

CCSS Standards: Addressing	• 7.RP.A.2
CCSS Standards: Building towards	• 7.EE.A

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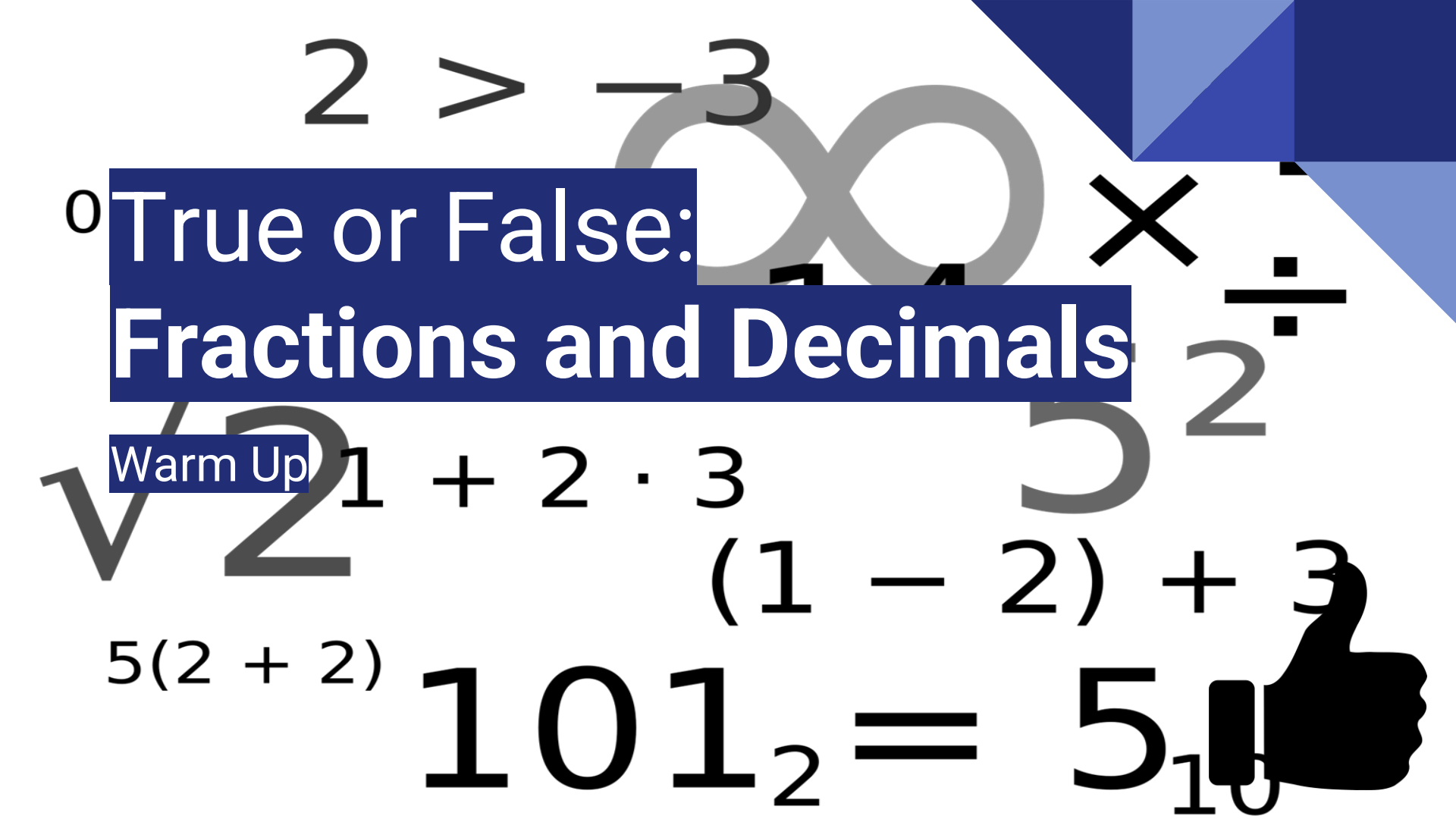
Let’s use tables, equations, & graphs to answer questions about proportional relationships!

True or False:
Fractions and Decimals

Warm Up



Decide whether each equation is true or false. Be prepared to explain your reasoning.

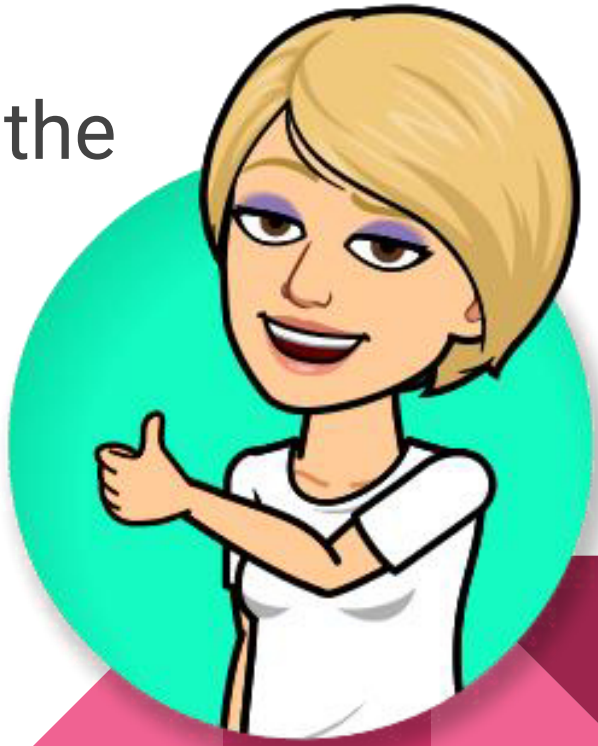
$$\frac{3}{2} \cdot 16 = 3 \cdot 8$$

$$\frac{3}{4} \div \frac{1}{2} = \frac{6}{4} \div \frac{1}{4}$$

$$(2.8) \cdot (13) = (0.7) \cdot (52)$$

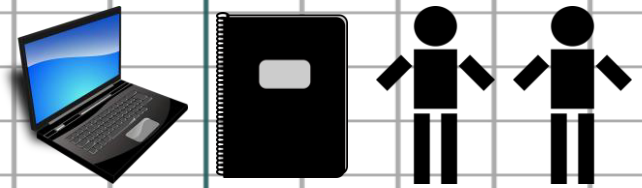
Today's Goals

- ❏ I can interpret a graph of a proportional relationship using the situation given.
- ❏ I can write an equation representing a proportional relationship from a graph.



Tables, Graphs, and Equations

Activity 13.2



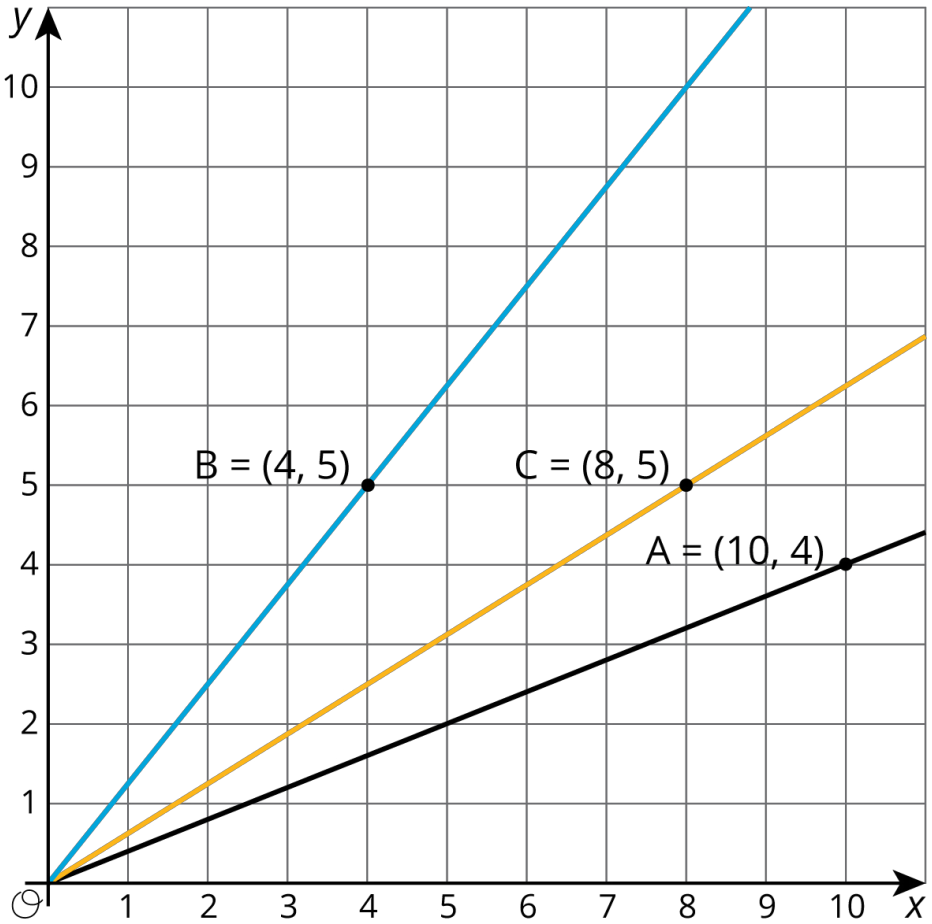
Assign each teammate a different letter: A, B, C.

- ➔Complete the activity on your own. (8 min.)
- ➔Share your ideas with your team.

Let’s hear from each group:

What connections can you see between the table, graph, and equation?

A graph of a line through the origin and passing through the first quadrant represents a **proportional relationship**.



To find the constant of proportionality…

ordered pair C.O.P.

$$(x,y) \longrightarrow y/x$$

An equation of a proportional relationship is given by

$$y = kx$$

where *k* is b/a for any point (*a*,*b*) on the graph other than the origin.

If I had point (5,4), what would the equation of the line be?

“Are you ready for more?”

The graph of an equation of the form $y = kx$ is a positive number, is a line through (0,0) and the point (1,k).

1. Name at least one line through (0,0) that cannot be represented by an equation like this.
2. If you could draw the graphs of *all* of the equations of this form in the same coordinate plane, what would it look like?

Hot Dog Eating Contest

Activity 13.3

- 5 Practices

Nathan’s Hot Dog Eating Contest

- ➔ began in 1997
- ➔ 20 contestants
- ➔ The contestant that consumes and keeps down the most hot dogs and buns in 10 minutes is the winner.
- ➔ the Mustard Belt

Andre and Jada were in a hot dog eating contest.

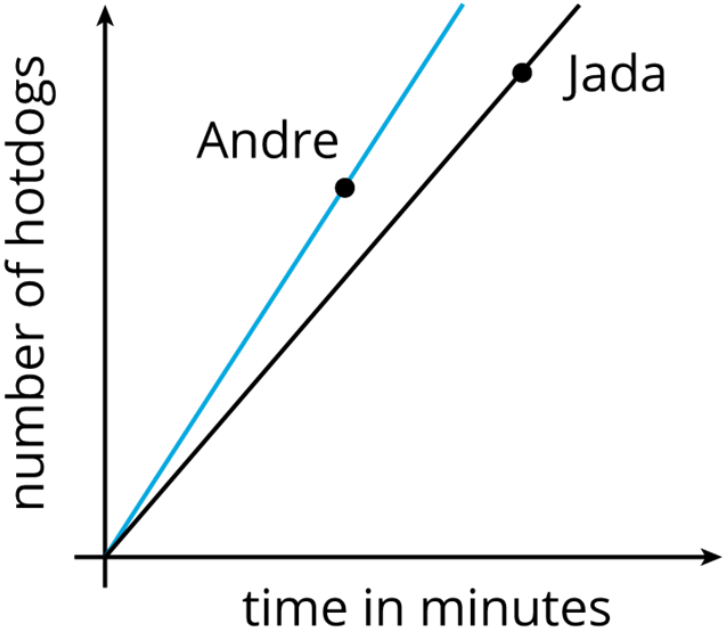
Andre ate 10 hot dogs in 3 minutes.

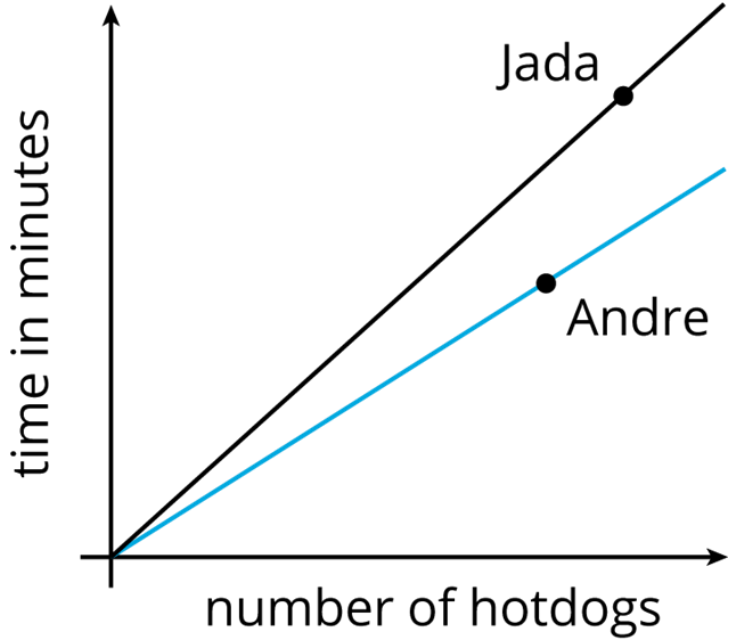
Jada ate 12 hot dogs in 5 minutes.

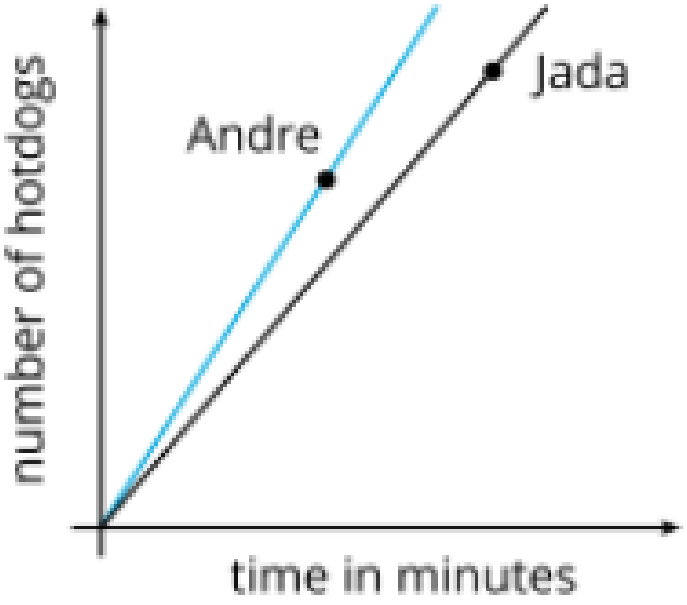
★ Complete the notebook page with your partner.

★ Be prepared to explain your thinking as a class.

At what rate did Andre eat hot dogs?







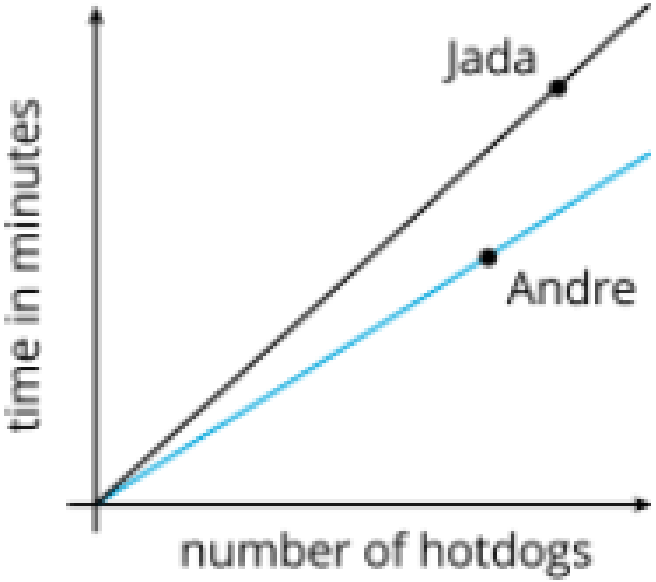
Write equations for the lines:

Andre → **h** = 10/3**t**

Jada → **h** = 12/5**t**

h = 2.4**t**

What does the constant of proportionality mean in each equation?



Write equations for the lines:

Andre → **t** = 3/10**h**

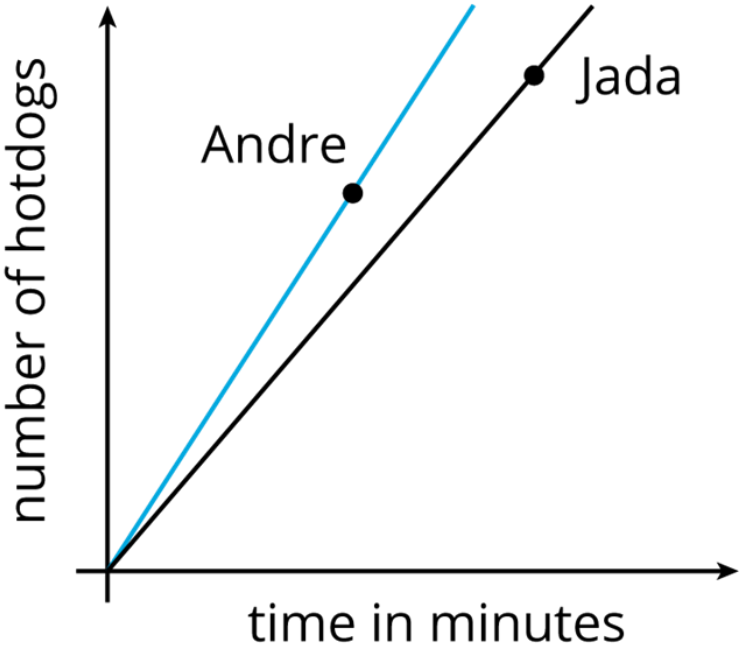
t = 0.3**h**

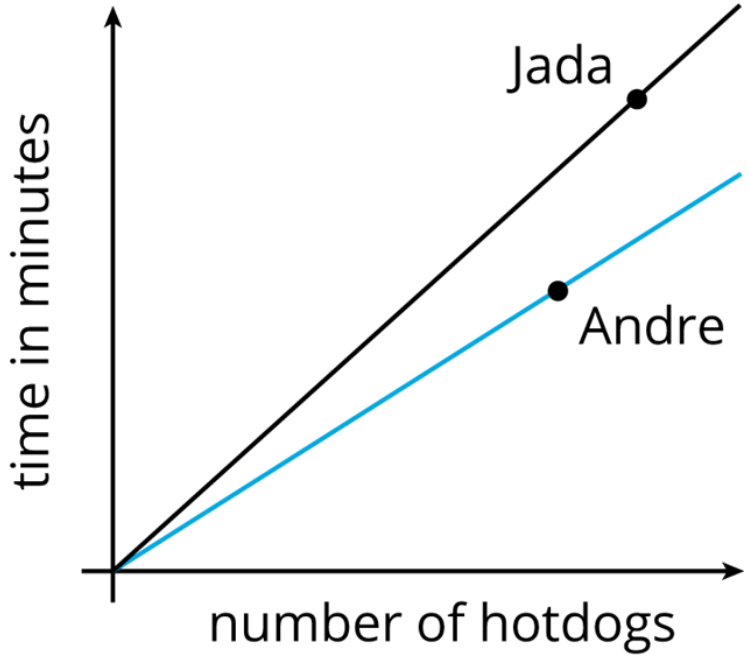
Jada → **t** = 5/12**h**

What does the constant of proportionality mean in each equation?

Do the graphs below tell the same story?

How can you see the same information in both?





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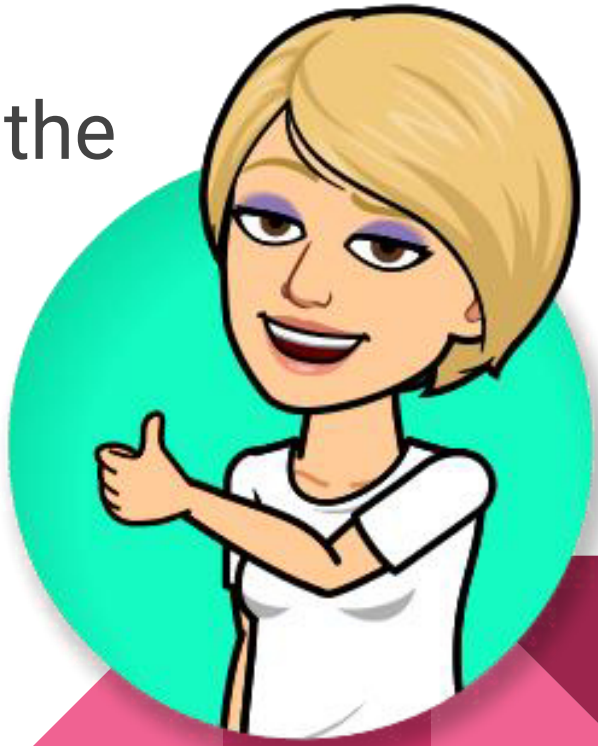

Spicy Popcorn

Cool Down

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