

**College Mathematics**  
combining increase/decreases as multipliers

PROBLEM:

From Monday to Tuesday, the price of milk went up 36%.

From Tuesday to Wednesday, the price of milk went down 15%.

From Monday to Wednesday, did the price of milk go up or down? By what percent?

SOLUTION OUTLINE:

1. Figure out the multiplier for the first step:

(a) Tuesday's price is \_\_\_\_\_ % *more than* Monday's price.

(b) Tuesday's price is \_\_\_\_\_ % *of* Monday's price.

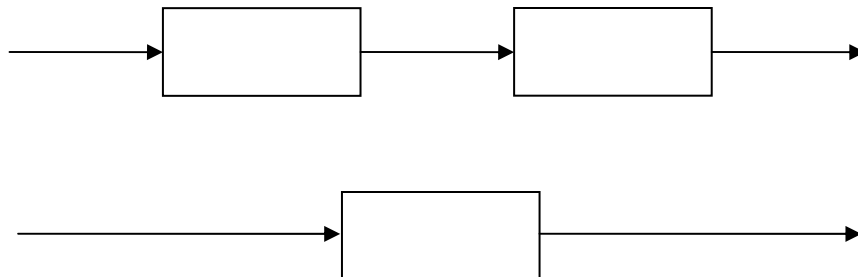
(c) Tuesday's price is \_\_\_\_\_ times Monday's price.

2. Figure out the multiplier for the second step:

(a) Wednesday's price is \_\_\_\_\_ % *less than* Tuesday's price.

(b) Wednesday's price is \_\_\_\_\_ % *of* Tuesday's price.

(c) Wednesday's price is \_\_\_\_\_ times Tuesday's price.



3. Calculate the over-all multiplier:

(a) Tuesday's price is \_\_\_\_\_ times Monday's price.

(b) Wednesday's price is \_\_\_\_\_ times Tuesday's price.

(c) Wednesday's price is \_\_\_\_\_ times Monday's price.

4. Interpret the results:

(a) Wednesday's price is \_\_\_\_\_ % *of* Monday's price.

(b) Wednesday's price is \_\_\_\_\_ % *less than / more than* Monday's price.

PROBLEM:

From yesterday to today, the price of cocoa went up 270%.

From today to tomorrow, the price of cocoa is expected to go down 80%.

From yesterday to tomorrow, will the price of cocoa go up or down? By what percent?

SOLUTION OUTLINE:

1. Figure out the multiplier for the first step:

(a) Today's price is \_\_\_\_\_ % *more than* yesterday's price.

(b) Today's price is \_\_\_\_\_ % *of* yesterday's price.

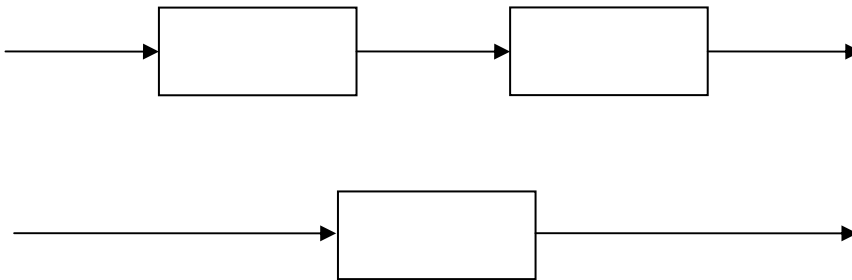
(c) Today's price is \_\_\_\_\_ times yesterday's price.

2. Figure out the multiplier for the second step:

(a) Tomorrow's price is \_\_\_\_\_ % *less than* today's price.

(b) Tomorrow's price is \_\_\_\_\_ % *of* today's price.

(c) Tomorrow's price is \_\_\_\_\_ times today's price.



3. Calculate the over-all multiplier:

(a) Today's price is \_\_\_\_\_ times yesterday's price.

(b) Tomorrow's price is \_\_\_\_\_ times today's price.

(c) Tomorrow's price is \_\_\_\_\_ times yesterday's price.

4. Interpret the results:

(a) Tomorrow's price is \_\_\_\_\_ % *of* yesterday's price.

(b) Tomorrow's price is \_\_\_\_\_ % *less than / more than* yesterday's price.