

Burgers and sandwiches

A snack bar sells burgers and sandwiches.

Tom buys 3 burgers and 2 sandwiches that cost \$4.05 in all.

Maria buys 2 burgers and 3 sandwiches that cost \$4.20 in all.

Find the cost of one burger and the cost of one sandwich.

Please show all your work.

Buying Chips and Candy

Ralph and Jody go to the store to buy potato chips and candy bars.

Ralph buys 3 bags of potato chips and 4 candy bars. He spends \$3.75.

Jody buys 4 bags of potato chips and 2 candy bars. She spends \$3.00.

Later Clancy joins Ralph and Jody and asks to buy one bag of potato chips and one candy bar from them. They need to work out how much he should pay.

Ralph writes

$$3p + 4b = 375$$

1. What does p mean in this equation?
2. Write a second equation, using p and b , for the items Jody bought. Please show all your work.
3. Use the two equations to figure out the price of a bag of potato chips and the price of a candy bar. Please show all your work.

Buying Chips and Candy: Student responses

E

$$\begin{array}{l}
 4p + 2b = 300 \\
 \frac{4p + 2b}{2} = \frac{300}{2} \\
 2p + b = 150 \\
 \frac{2p + b}{4} = \frac{150}{4} \\
 \frac{2p + b}{4} = 37.5 \\
 p + 0.5b = 18.75 \\
 p + b = 38 \\
 \hline
 4p + 2b = 300 \\
 \frac{4p + 2b}{2} = \frac{300}{2} \\
 2p + b = 150 \\
 \frac{2p + b}{2} = \frac{150}{2} \\
 p + 0.5b = 75 \\
 \hline
 \end{array}$$

$$\begin{array}{l}
 \frac{150}{3} \\
 3p + 4b = 375 \\
 \frac{3p + 4b}{3} = \frac{375}{3} \\
 p + \frac{4b}{3} = 125 \\
 \frac{p + \frac{4b}{3}}{4} = \frac{125}{4} \\
 \frac{p + \frac{4b}{3}}{4} = 31.25 \\
 p + \frac{4b}{3} = 125 \\
 p + b = 31.25
 \end{array}$$

potato chips .50
 candy bar .40

$$\begin{array}{l}
 p = 50 \\
 b = 25 \\
 p = 40 \\
 b = 40
 \end{array}$$

F

$$\begin{array}{l}
 3p + 4b = 375 \\
 (4p + 2b = 300) \times 2 \\
 \hline
 3p + 4b = 375 \\
 8p + 4b = 600 \\
 \hline
 5p = 225 \\
 p = 45 \\
 3(45) + 4b = 375 \\
 135 + 4b = 375 \\
 4b = 240 \\
 b = 60
 \end{array}$$

potato chips 45 cents
 candy bar 60 cents

Buying Chips and Candy: Student responses (continued)

G

	Pc	CB	
Ralph	- 3	4	- 3.75
Jody	- 4	2	- 3.00
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	7	6	6.75

$$\begin{array}{r}
 13 \overline{) 6.75} \\
 \underline{65} \\
 25 \\
 \underline{13} \\
 120 \\
 \underline{117} \\
 30 \\
 \underline{26} \\
 40 \\
 \underline{39} \\
 100
 \end{array}$$

.52 cents apiece

$$\begin{array}{r}
 75 \\
 4 \\
 \hline
 180 \\
 120 \\
 \hline
 300
 \end{array}$$

$$\begin{array}{r}
 45 \\
 3 \\
 \hline
 135 \\
 240 \\
 \hline
 375
 \end{array}$$

~~60~~

H

$$\begin{array}{r}
 3.75 + 3.00 \\
 6.75
 \end{array}$$

.75	7	6	.25
5.25	1	50	
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6.75			

potato chips	<u>.75</u>
candy bar	<u>.25</u>