

# Simplifying expressions

## by adding and subtracting like terms ( At The Restaurant)



- **The Headteacher decided, to take 10 top Science students** to the local fast-food restaurant.
- **He takes orders** before going to the till.
- **No one knows the exact prices yet, so you will use the price codes instead.**
- The restaurant host charity event and some students donate extra money.
- **The orders are written in words for you, re-write it using the price codes**
- **Simplify the order** by adding up/ subtracting the price codes (collect like terms).

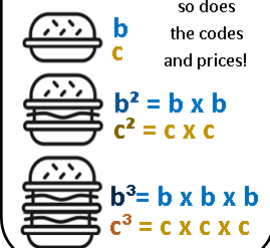
| MAIN              |            |
|-------------------|------------|
| item              | price code |
| beef burger       | <b>b</b>   |
| cheese burger     | <b>c</b>   |
| fish burger       | <b>f</b>   |
| hot wings         | <b>h</b>   |
| kebab             | <b>k</b>   |
| popcorn chicken   | <b>p</b>   |
| Quarter-pounder   | <b>q</b>   |
| veggie burger     | <b>v</b>   |
| extra large pizza | <b>x</b>   |
| zucchini bake     | <b>z</b>   |

| DESERT           |            |
|------------------|------------|
| item             | price code |
| apple pie        | <b>a</b>   |
| donut            | <b>d</b>   |
| ice cream        | <b>i</b>   |
| Jaffa cake       | <b>j</b>   |
| upside down cake | <b>u</b>   |
| yogurt           | <b>y</b>   |

| SIDES          |            |
|----------------|------------|
| item           | price code |
| gravy          | <b>g</b>   |
| nachos         | <b>n</b>   |
| egg fried rice | <b>r</b>   |
| side salad     | <b>s</b>   |

| DRINK        |            |
|--------------|------------|
| item         | price code |
| espresso     | <b>e</b>   |
| late         | <b>l</b>   |
| milkshake    | <b>m</b>   |
| orange juice | <b>o</b>   |
| tea          | <b>t</b>   |
| water        | <b>w</b>   |

**REMEMBER!**  
The burgers' sizes are different so does the codes and prices!



$b^2 = b \times b$   
 $c^2 = c \times c$   
 $b^3 = b \times b \times b$   
 $c^3 = c \times c \times c$

| SPECIALS             |            |
|----------------------|------------|
| item                 | price code |
| double beef burger   | $b^2$      |
| triple cheese burger | $b^3$      |
| double cheese burger | $c^2$      |
| triple cheese burger | $c^3$      |

beef burger, add apple pie, add cheese burger, add 1, add orange juice, add kebab, add milkshake, add 2, take away kebab, add cheese burger, add 1, add milkshake, add orange juice, add kebab, add apple pie, add double cheese burger, take away apple pie add beef burger, take away milkshake, add kebab, take away beef burger, add kebab, add 3, add orange juice, add 2, add beef burger, add apple pie, take away cheese burger add double cheese burger, add 1, add kebab, add milkshake, add double cheese burger, add 1, take away apple pie, add 2, take away beef burger,

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**Simplified order in price codes (in the alphabetical order):**

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**ANSWERS**

beef burger, add apple pie, add cheese burger, add 1, add orange juice, add kebab,  
 add milkshake, add 2, take away kebab, add cheese burger, add 1, add milkshake,  
 add orange juice, add kebab, add apple pie, add double cheese burger, take away  
 apple pie add beef burger, take away milkshake, add kebab, take away beef burger,  
 add kebab, add 3, add orange juice, add 2, add beef burger, add apple pie, take away  
 cheese burger add double cheese burger, add 1, add kebab, add milkshake, add  
 double cheese burger, add 1, take away apple pie, add 2, take away beef burger,

$$b+a+c+1+o+k+m+2-k+c+1+m+o+k+a+c^2-a+b-m+k-b+k+3$$

$$+o+2+b+a-c+c^2+1+k+m+c^2+1-a+2-b=$$

Simplified order in price codes (in the alphabetical order):

$$a + b + c + 2c^2 + 4k + 2m + 13$$

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| kebab             | k          |
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| veggie burger     | v          |
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