

Number Trial #3:

“Wheaty-Bitz”

A food manufacturer is starting a range of crunchy breakfast cereal called Wheaty-Bitz and needs the information on the side of the packet checked and completed.

A packet of Wheaty-Bitz will weigh 450 grams. It will have, on average, 180 Wheaty-Bitz.

Fill in the missing information (grey spaces):

	30g serving = Bitz	Per 100g = Bitx	% of recommended daily intake for each 30 g serving
Energy	452 kJ	1507 kJ	5.2%
(kilocalories)	(kCal)	(kCal)	5.2%
Protein	3.2 g	11.7 g	6.4%
Fat	0.3 g	1.0 g	0.4%
– Saturated Fat	0.1 g	0.3 g	0.4%
Carbohydrate			5.8%
– Sugars	0.6 g	2.0 g	0.7%
Dietary Fibre	3.5 g	11.7 g	
Sodium	55 mg	183 mg	
Calcium	23 mg	77 mg	1.8%

Nutritional Information

1 kilocalorie = 4.18 kilojoules

The recommended daily intake of:

carbohydrate	310 grams
dietary fibres	30 grams
sodium	2300 milligrams.
calcium	1.3 grams.

Low fat milk has 1200 mg of Calcium per litre.

Consider the following advertising on the packet:

“Wheaty-Bitz has 17% less sugar than its competitors”.

— What amount of sugar (per 100g) must the competitors have for this to be true?

“A serving with low fat milk provides a fifth of the recommended daily intake of calcium.”

— What size serving of milk does this need?

Answers: Number Trial #3:

"Wheaty-Bitz"

A food manufacturer is starting a range of crunchy breakfast cereal called Wheaty-Bitz and needs the information on the side of the packet checked and completed.

A packet of Wheaty-Bitz will weigh 450 grams. It will have, on average, 180 Wheaty-Bitz.

Fill in the missing information (grey spaces): **Achieved in Red. Need three different**

	30g serving	Per 100g	% of recommended daily intake for each 30 g serving
	$\frac{30}{450} \times 180 = 12$ Bitz	$\frac{100}{450} \times 180 = 40$ Bitz	
Energy	452 kJ	1507 kJ	5.2%
(kilocalories)	$452 \div 4.18 = 108$ kCal	$1507 \div 4.18 = 361$ kCal	5.2%
Protein	3.2 g	11.7 g	6.4%
Fat	0.3 g	1.0 g	0.4%
– Saturated Fat	0.1 g	0.3 g	0.4%
Carbohydrate	$\frac{5.8}{100} \times 310 = 18$ g.	$18 \div \frac{30}{100} = 60$ g	5.8%
– Sugars	0.6 g	2.0 g	0.7%
Dietary Fibre	3.5 g	11.7 g	$\frac{3.5}{30} (\times 100\%) = 11.7\%$
Sodium	55 mg	183 mg	$\frac{55}{2300} (\times 100\%) = 2.4\%$
Calcium	23 mg	77 mg	1.8%

Nutritional Information

1 kilocalorie = 4.18 kilojoules

The recommended daily intake of:

carbohydrate	310 grams
dietary fibres	30 grams
sodium	2300 milligrams.
calcium	1.3 grams.

Low fat milk has 1200 mg of Calcium per litre.

Consider the following advertising on the packet: **Merit in Purple: need two of three**

"Wheaty-Bitz has 17% less sugar than its competitors".

WB has 2.0 g. "17% less" means it has 83% sugar of competitors = $\frac{83}{100} \times \text{competitor's} = 2.0$

so competitor's have $2.0 \div \frac{83}{100} = 2.41$ grams (note: $\frac{117}{100} \times 2.0 = 2.34$ is wrong)

"A serving with low fat milk provides a fifth of the recommended daily intake of calcium."

Fifth of RDI Ca = $\frac{1}{5} \times 1300 = 260$ mg. 23 mg of this comes from WB, so 237 mg comes from milk. 1200 mg per L, so need : $\frac{237}{1200} \times 1$ Litre = 197.5 mL. **A serving is 200 mL of milk** 2014