

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**