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Gr 8 Wiskunde / Mathematics

Breuke / Fractions (5)

1. Persentasies / Percentages 100%.

a) % van 'n getal / % of a number

• As % gegee word in die vraag → 15 %	• If a % is given in a question → 15 %
• Skryf as breuk $\frac{15}{100}$	• Write as fraction $\frac{15}{100}$
• "van" beteken ×	• "of" means ×

1. 20% van of R400 ?

$= \frac{20}{100} \times \frac{400}{1}$

$= \frac{20}{100} \times \frac{400}{1}$

$= \frac{20 \times 4}{1 \times 1}$

$= \frac{80}{1}$

$= R80$

1. Herskryf as breuke
   Rewrite as fractions.
2. "Kanselleer uit"
   "Cancel out"

2. 5% van of 1600 ?

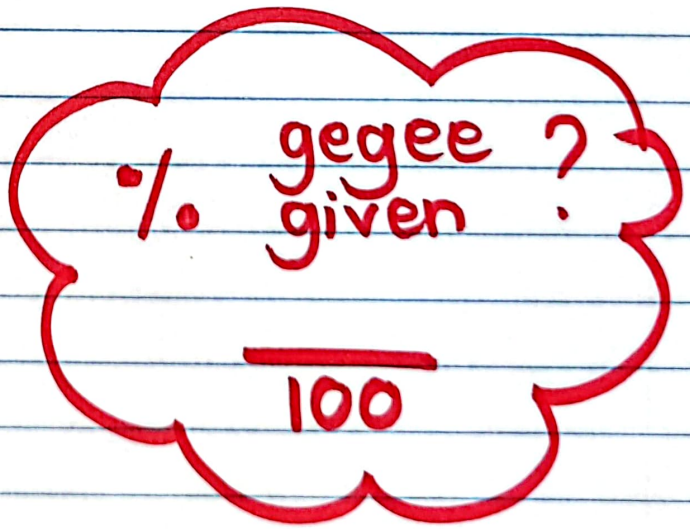
$= \frac{5}{100} \times \frac{1600}{1}$

$= \frac{5}{100} \times \frac{1600}{1}$

$= \frac{5 \times 16}{1 \times 1}$

$= \frac{80}{1}$

$= 80$



3. 25% van of $\frac{20}{25}$

$= \frac{25}{100} \times \frac{20}{25}$

$= \frac{25}{100} \times \frac{20}{25}$

$= \frac{2}{10}$

$= \frac{1}{5}$

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b) % moet **bereken** word | % has to be **calculated**

• As % **gevra** word	• % is **asked**
• $\times \frac{100}{1}$	• $\times \frac{100}{1}$
• Skryf alles as breuke	• Write as fractions

1. Watse persentasie is 14 van 20?
   What percentage is 14 of 20?

$$\frac{14}{20} \times \frac{100}{1}$$
$$= \frac{14}{20} \times \frac{100}{1}$$
$$= \frac{14 \times 10}{2 \times 1}$$
$$= \frac{140}{2}$$
$$= 70\ \%$$

1. Skryf 'n som
   Write a calculation.
2. "Kanselleer uit"
   "Cancel out"

As jy onseker is van waar om watter getalle te skryf, sodra % gevra word skryf $\times \frac{100}{1}$ aan die einde, dan los dit gewoonlik 2 getalle om as 'n breuk te skryf

If you are unsure about where to write which number, once the ask you to calculate %, write $\times \frac{100}{1}$ at the back, which then leaves you with 2 numbers to put into a fraction

2. Bereken die persentasie as jy 32 uit 40 vir 'n toets kry.
   Calculate your percentage if you get 32 out of 40 for a test.

$$\frac{32}{40} \times \frac{100}{1}$$
$$= \frac{32}{40} \times \frac{100}{1}$$
$$= \frac{32 \times 10}{4 \times 1}$$
$$= \frac{320}{4}$$
$$= 80\ \%$$

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+ − / + −

c) Vermeerder / Verminder / Increase / Decrease

- Deel met wat jy hét (oorspronklike), maal met wat jy wil hê!
- Divide with what you have (original), multiply with what you want!

1. Bepaal die % vermeerdering as die prys van 'n hemp van R60 na R84 gestyg het.
Calculate the % increase if the price of a shirt went up from R60 to R80.

$\frac{\text{verskil}}{\text{oorspronklike}} \times \frac{100}{1}$ $\frac{\text{difference}}{\text{original}} \times \frac{100}{1}$

$\frac{84-60}{60} \times \frac{100}{1}$

$= \frac{24}{60} \times \frac{100}{1}$

$= \frac{24}{60} \times \frac{100}{1}$

$= \frac{24 \times 10}{6 \times 1}$

$= \frac{240}{6}$

$= 40\%$

2. Bepaal die % afname indien 'n burger van R20 na R18 verminder.
Calculate the % decrease if the price of a burger goes down from R20 to R18

$\frac{\text{verskil}}{\text{oorspronklike}} \times \frac{100}{1}$ $\frac{20-18}{20} \times \frac{100}{1}$ $\frac{\text{difference}}{\text{original}} \times \frac{100}{1}$

$= \frac{2}{20} \times \frac{100}{1}$

$= \frac{2}{20} \times \frac{100}{1}$

$= \frac{2 \times 10}{2 \times 1}$

$= \frac{20}{2}$

$= 10\%$

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+ − + −

d) Vermeerder / Verminder / Increase / Decrease

- Met hierdie somme gee hulle die %.
- With these calculations, the % is given.

Gebruik Verhoudings — Use ratios

Vermeerder — $100 : 100+\%$ — Increase

$\times \frac{100+\%}{100}$

Verminder — $100 : 100-\%$ — Decrease

$\times \frac{100-\%}{100}$

1. Bereken hoeveel 'n nuwe kar sal kos as die kosprys van R120000 met 15% vermeerder
Calculate how much a new car would cost if the cost price of R120000 is increased by 15%

Verhouding / Ratio : $100 : 100+15$

$100 : 115$

$R120\,000 \times \frac{115}{100}$

$= \frac{120\,000}{1} \times \frac{115}{100}$

$= 1200 \times 115$

$= R138\,000$

$$\begin{array}{r} 1200 \\ \times 115 \\ \hline 6000 \\ 12000 \\ +120000 \\ \hline 138000 \end{array}$$

"Sonder die gebruik van 'n sakrekenaar = Wys al jou stappe"

"Without the use of a calculator = Show all calculations"