

WALT Apply my knowledge and solve word problems

Success Criteria I can apply my skills and knowledge to solve problems.

QUESTIONS SUITABLE TO ASSESS NCEA LEVEL 1 ACHIEVEMENT STANDARD 1.7

EXERCISE 11

Achievement Standard Questions

- 1 At 6 pm the ground temperature was 6°C . It was expected to drop a further 9°C by 6 am the next day. What would the ground temperature be at 6 am the next day?
- 2 A mini submarine was reported at -1050 m. It rose up 250 m to observe a new variety of fish. What was its depth (expressed as an integer) when observing the fish?
- 3 Jan ate $\frac{1}{3}$ of her lunch while walking to school and another $\frac{1}{4}$ at interval. What fraction of her lunch did she have left to eat at lunchtime?
- 4 At the supermarket Heta bought 8 kg of potatoes at \$3.50 per 4 kg, 5 bunches of carrots at \$1.40 a bunch and 6 litres of milk at \$1.70 per litre. How much did all this cost Heta?
- 5 In a group of 20 school students three had red hair. In the school there were 600 students. How many would you estimate had red hair?
- 6 The ratio of boys to girls at a school was 3 : 2. If there were 200 students in the school, how many boys would there be?
- 7 The answer to a problem, according to my calculator, was 3.27×10^4 . What was the answer in ordinary form?
- 8 When adults are asked to complete a questionnaire only $\frac{4}{5}$ of them do so. If I sent out 60 questionnaires to adults how many would I expect to answer them?

Excellence and Merit Standard Questions

- 9 Janine noticed the following signs in a shop.
“Jeans reduced from \$35 to \$24.00”
“Tops were \$18.50 now only \$15.70”
“Skirts now at a low price of \$27, down from \$32.50”
 - a If Janine purchased a pair of jeans, three tops and two skirts from the shop, how much money would she have saved in total?
 - b By what fraction were the jeans reduced?
 - c Another advertising brochure for the same sale said that the skirts were reduced by $\frac{1}{4}$ of the original price. Is this a correct statement? Show working to justify your answer.

10 Jim was fortunate to win \$600 in a raffle. He decided to spend $\frac{1}{4}$ of it on a CD player. He then spent $\frac{1}{5}$ of the remaining money on CDs and $\frac{3}{4}$ of what he had left on clothing. He saved the rest.

- a** What fraction of his money did he save?
- b** How much did he spend on each of the items he purchased?
- c** How much money did he save?



11 As a fundraiser the soccer club decided to sell cheese rolls. It cost them \$2 for 10 breadrolls, \$5 for cheese to fill 20 rolls and \$1 for margarine for 100 rolls.

- a** How much does it cost to make up one cheese roll?
- b** If the cheese rolls are sold at \$6 per 10 rolls, how much profit does the club make per roll?
- c** What fraction of the cost price is this profit?
- d** The club wishes to make \$500 profit from selling cheese rolls. How many would they need to sell at \$6 per 10 rolls to do this? Do you think this is reasonable? If you were in charge of the project what would you do to increase profits? Explain your answer and justify it with mathematical statements.

12 You are in charge of setting the ticket price to a disco your school is running to raise money for a new sound system in the hall. Here are some details to help you.

- The school roll is 850.
- The sound system you hope to buy costs \$5000. You do not expect to raise all this from the concert.
- The options for music at the disco are a live band charging \$500 for the night, a disc jockey who charges \$450 for the night or students playing their own CDs charging nothing. The band and disc jockey provide their own lighting and equipment.
- The hall hire is \$150 for the night, but you will get this reduced by half if over 200 students turn up.
- You will need some advertising around the school and have to find the cost for it.
- You will need some spot prizes for the evening to encourage students to attend.

Using this information, and any other not given here, calculate a reasonable price for each ticket and justify your answer by correct mathematical statements and reasoning.

Note: Further questions can be found in percentage chapter.

WORDS YOU SHOULD KNOW



accuracy
approximation
cancelling
comparison
decimal places
denominator
equivalent
estimation

fractions
improper
integers
mixed
numerator
order of operations
quantity

ratio
rounding
significant figures
simplify
square
square root
standard form