

# Study & Master

Support Pack | Grade 12

CAPS

# Mathematical Literacy

## Basic skills: revision questions

This revision pack for **Mathematical Literacy Grade 12** provides valuable support for the Basic Skills section of the CAPS Curriculum to help learners with exam preparation. These basic skills are required to work out problems in other sections of the Curriculum, and should therefore be revised before studying other topics. A set of 50 revision questions and their answers is also provided.

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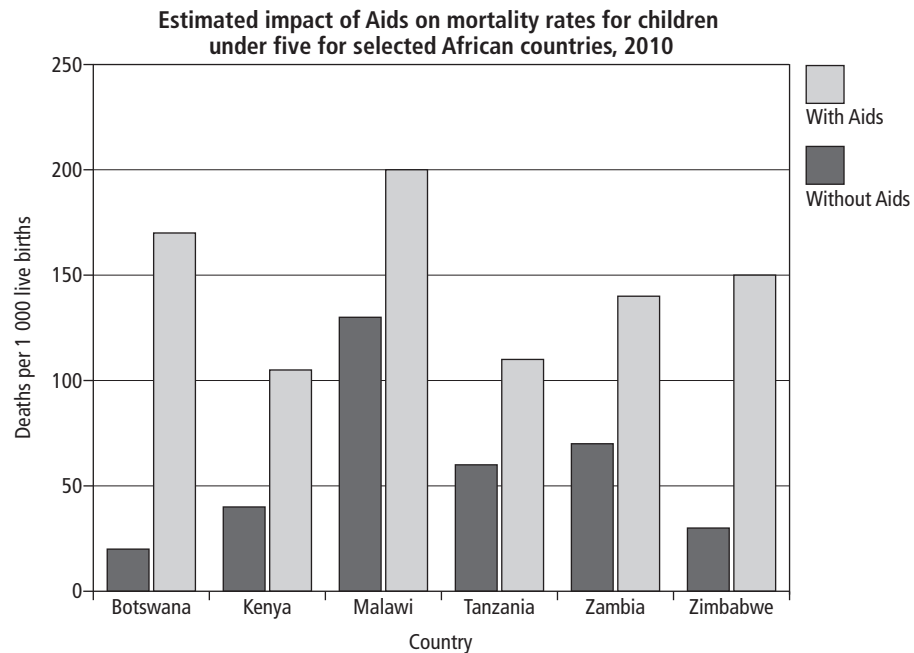
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## Basic skills: revision questions

1. A farmer buys food for his farm animals in 50-kg bags. This information is printed on each bag.

Nutrition facts		WINTER LICK (50 kg)	
	g/kg		mg/kg
Protein	400	Cobalt	2,5
Fibre	50	Copper	50
Moisture	120	Iodine	2,6
Calcium	32	Iron	220
Phosphorus	16	Manganese	400
Sulphur	7,5	Zinc	350
		Magnesium	250
		Selenium	0,6
		<b>Recommended intake:</b>	
		Sheep/goats	78 g/day
		Cattle	375 g/day

- a) Calculate the amount of nutrients (in grams (g) and milligrams (mg)) one cow will consume if she receives the recommended amount of food per day.
- b) If a cow receives the recommended amount of food per day, in what ratio will she receive the following? Give each answer in its simplest form.
- protein to manganese
  - cobalt to iodine
  - manganese to magnesium
2. The ratio of money a girl spends on skin care to the money a boy spends on skin care is 5 : 2. If a girl spends R195,50 on skin care, how much does a boy spend on skin care?
3. The graphical representation below shows the estimated impact of Aids on the mortality rate of children below five years of age for 2010.



(Source: US Census Bureau, 27 June 2000)

- a) Give the estimated rate of children under the age of five who die of Aids in the six African countries listed on the graph. Give your answer as a simplified fraction and a percentage.
- b) What is the ratio of child deaths in Malawi and Zimbabwe of children under five dying of Aids to children under five dying without Aids?
4. The table shows call charges between two licensed operators.

Number range		Retail rates (R/min.)	
From	To	Standard time Weekdays from 07:00 to 19:00	Talkmore time Weekdays from 19:00 to 07:00 and from Friday 19:00 to Monday 07:00
087 350 0000	087 359 9999	0,82	0,82
087 780 0000	087 781 9999	1,07	1,07
087 805 0000	087 805 0999	1,07	1,07
087 750 0000	087 754 9999	0,59	0,59
087 810 0000	087 810 4999	1,00	0,50
087 700 0000	087 701 9999	1,00	0,50
087 845 0000	087 845 1999	0,90	0,90
087 940 0000	087 940 4999	0,91	0,46
087 870 0000	087 870 1999	0,91	0,46
087 830 0000	087 830 0999	0,73	0,42
087 855 0000	087 855 1999	0,84	0,84
087 960 0000	087 960 6999	0,79	0,42
087 985 0000	087 985 2999	1,07	1,07
087 820 0000	087 820 2999	0,82	0,41

\* Calls are charged per second, with a minimum charge of R0,72 for all calls.

- a) Use the table to calculate the cost for each phone call from telephone number 087 700 2491 to telephone number 087 701 0909.
- i) a call of  $3\frac{1}{2}$  minutes at 16:00 on a Tuesday
- ii) a call of two seconds at 14:00 on a Sunday
- b) Use the table to calculate the cost for each phone call from telephone number 087 964 0410 to telephone number 087 961 3139.
- i) a call of 5 minutes 20 seconds at 07:30 on a Monday
- ii) a call of 5 minutes 20 seconds at 06:20 on a Monday
- c) What is the difference per minute between the cost of a call during Standard time and a call during Talkmore time from number 087 820 2569 to number 087 820 2984? Give your answer as a ratio.
5. Shafiek's medical aid contribution amounts to R2 184,00 per month for himself as principal member of his medical aid scheme. His wife and two children are also on this medical aid scheme. Members who belong to a medical scheme may deduct a fixed amount per month from their income for tax purposes:
- Single member: R310,00  
 First registered member: R310,00  
 All other registered dependants: R209,00 (each).
- a) The ratio of the monthly payment for employer and employee is 2 : 1. How much do Shafiek's employer and Shafiek each pay into the medical aid per month?
- b) How much may Shafiek deduct from tax per month?

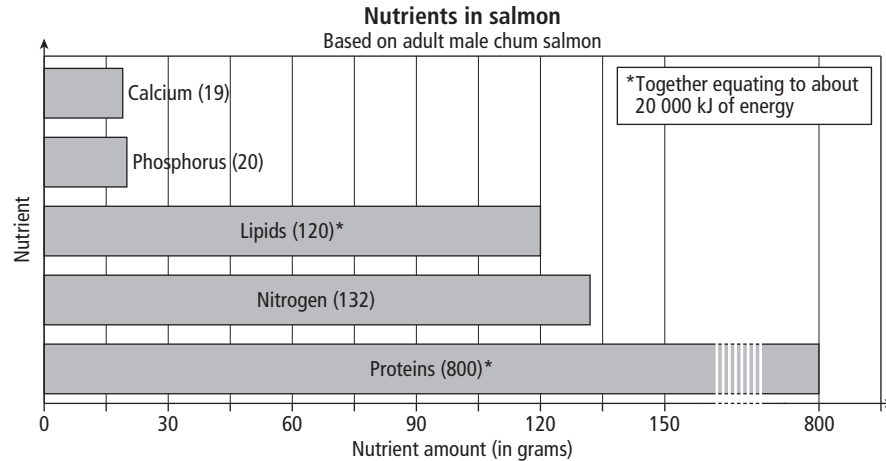
6. Post Office domestic parcel rates

Product	Rate
Ordinary parcel (counter to counter)	R52,50 for the first kilogram (kg) R7,05 for each additional kg or part of a kg
Cash-on-delivery (COD) charges (in addition to the parcel rate)	R28,20 per parcel
Insurance is available at a rate of 3% of the declared value to a maximum of R5 000 with a minimum of R4,20 per parcel.	

(Source: *The South African Post Office*, November 2018)

- a) a counter-to-counter parcel with a mass of 32,4 kg
  - b) a counter-to-counter parcel with a mass of 12,5 kg that is insured to the value of R150
  - c) a COD parcel with a mass of 19,2 kg that is insured to the value of R1 500,00
7. According to health researchers, the unofficial rule for a handbag or school bag's mass is that it should not exceed 10% of your body mass. If you carry more than this mass on a regular basis, you could experience back pain.
- a) What should the maximum mass of a school bag be for a learner with a mass of 51 kg?
  - b) The average mass of one school textbook is 750 g. If a learner needs to take seven textbooks to school, will the mass of the bag adhere to the unofficial rule for a learner with a mass of 41 kg?
8. The Greeks of long ago believed that the golden ratio for the sides of a rectangle are in a proportion of 1 : 1,618. They believed that rectangles that adhere to this ratio are the most pleasing to the eye. The width of a rectangle is 4,5 cm. What should its length be for it to adhere to the golden ratio?
9. The ratio of a concrete mix is determined by the purpose for which the concrete will be used:
- Concrete more than 75 mm thick: cement, river sand and washed aggregate in a ratio of 1 : 2,5 : 4
  - Concrete less than 75 mm thick: cement, river sand and washed aggregate in a ratio of 1 : 2 : 3
  - Rough bedding concrete: cement, river sand and washed aggregate in a ratio of 1 : 3 : 6.
- If 50 buckets of cement are used, determine, for each type of concrete, how much river sand and washed aggregate are needed.
10. In June 2006, the inflation rate in Zimbabwe was 1 043%, and in August 2007, it was about 5 000%.
- a) Explain in your own words what the term inflation means.
  - b) Determine the rate of increase in inflation in Zimbabwe between June 2006 and August 2007. Round off your answer to one decimal place.
  - c) Is an inflation rate of 1 043% normal? Explain.
  - d) What does the inflation rate say about the financial situation of a country?
11. Altogether 930 000 of 2,4 million tickets that were available for Rugby World Cup tournaments were sold a few months before the first match. What percentage of tickets was sold a few months before the first match? Round off your answer to one decimal place.

12. The graph shows the nutrients that are present in an adult male chum salmon.



**Note**  
1 calorie = 4,186 kJ

(Source: *Scientific American*, August 2006)

- a) What is the ratio of protein to nitrogen to fats (lipids) in an adult male salmon?
  - b) If another salmon contained 690 g of protein, how many grams of fats (lipids) and nitrogen would it contain?
  - c) Convert 20 000 kJ of energy to calories.
13. Liza is a university student. She arrived on campus at 08:00 for her first class. Her last class finished at 17:00. She spent her time at university in class, having lunch, socialising and exercising in the gym in the ratio 4 : 2 : 5 : 1. Calculate the time (in hours and minutes) she spent on each activity.
14. According to the Engineering Council of South Africa's records, between 1998 and 2004, altogether 50 570 students enrolled at South African universities for engineering courses, and 8 900 graduated.
- a) Would it be correct to say that one out of every six first-year engineering students will complete their degrees? Give a reason for your answer.
  - b) Calculate the graduation rate of engineering students between 1998 and 2004. Give your answer correct to one decimal place.
15. The population of Niagara Falls in New York in 1997 was 60 000, and 25 years earlier it was 100 000.
- a) Was there an increase or a decrease in the population of Niagara Falls between 1972 and 1997? What was the percentage increase or decrease?
  - b) By how much did this percentage increase or decrease on average per year? Give your answer as a percentage, correct to one decimal place.
16. The table shows part of a municipal account for two different properties before and after increases in rates and taxes, and other municipal services.

Land/site value	Property A: R10 000		Land/site value	Property B: R190 000	
	Before increase	After increase		Before increase	After increase
Rates/taxes on land value	—*	—*	Rates/taxes on land value	1 387,32	1 484,06
Electricity	20,49	21,72	Electricity	942,31	1 020,61
Water	33,72	51,00	Water	611,14	796,54
Sanitation	21,60	33,52	Sanitation	73,28	90,88
Waste services	18,40	19,70	Waste services	52,16	55,82
<b>Total</b>	<b>94,21</b>	<b>125,94</b>	<b>Total</b>	<b>3 066,21</b>	<b>3 447,91</b>

\* Property owners whose land has a value of R10 000 or less receive a rebate of 100%.

- a) Explain what rebate of 100% means.  
 b) How much more did each household have to pay after the increases?  
 c) What was the total percentage increase in municipal costs for each household? Give your answers to one decimal place.
17. Caren bought R100 fuel for her lawn mower and received 6,09 ℓ of fuel. What was the price of fuel per litre?
18. Transfer duty is an amount of money you pay to the government when you buy a house or flat. Calculate the transfer duty payable on each property below.

New rates of transfer duty	
R0 – R900 000	0%
R900 001 – R1 250 000	3% of the value above R900 000
R1 250 001 – R1 750 000	R10 500 + 6% of the value above R1 250 000
R1 750 001 – R2 250 000	R40 500 + 8% of the value above R1 750 000
R2 250 001 – R10 000 000	R80 500 + 11% of the value above R2 250 000
R10 000 001 and above	R933 000 + 13% of the value above R10 000 000

(Source: *sars.gov.za*, November 2018)

- a) a town house sold for R850 000  
 b) a house sold for R1,3 million  
 c) a house sold for R2 200 000
19. The Lethe Power Station at Eskom burns approximately 50 000 tons of coal per day, producing 18 000 tons of ash.
- a) If one ton of coal is burnt per day, how many tons of ash will be produced?  
 b) Convert your answer to kilograms.
20. The table shows the municipal accounts for two households.

**Note**

1 ton (t) = 1 000 kg

Items	Household A	Household B
Land value (R)	10 000,00	190 000,00
Property rates and taxes (R)	–	1 387,32
Electricity (kWh)	100,00	945,00
Water (kl)	35,00	611,10
Sanitation (kl)	21,60	73,28
Waste services (R)	18,40	52,16
<b>Total</b>	<b>175,00</b>	<b>3 068,86</b>

- a) Use the information on household tariff increases to calculate how much each account will be after the increases have been introduced.

**Municipal tariff increases/changes**

- » 100% rebate on site with a value of R10 000 and less
- » 6% increase in electricity
- » 7% increase in waste services, property rates, water and sanitation

- b) How much more will each household account be after the increases?  
 c) What was the total percentage increase for each household?  
 d) Explain in your own words what a rebate is.  
 e) In the same month, the price of petrol increased from R16,91 per litre to R17,10 per litre. What was the percentage increase in the price of petrol that month?

21. A shop has a sale and marked down the prices of various items as shown in the table on the next page. Give the missing information (a to i). Round the percentages in your answers off to the nearest percentage.

**Remember!**

$$\text{Percentage discount} = \frac{\text{original value} - \text{decreased value}}{\text{original value}} \times 100$$

Item	Original price (R)	New price (R)	Percentage discount
Toaster	126,55	a)	5%
Kettle	245,89	191,79	b)
Six mugs	c)	40,94	10%
Alarm clock	39,95	17,98	d)
Photo frame	16,00	e)	25%
Bedside lamp	f)	179,82	60%
Duvet cover	288,64	184,73	g)
Curtains (two drops)	h)	756,92	15%
Blanket	59,99	i)	12%

22. You need to buy flour and sugar for your mother, who is baking a cake. She instructs you to buy 2,5 kg of each. These are the prices of the different masses in which the products are sold.

Flour		Sugar	
Mass (kg)	Price (R)	Mass (kg)	Price (R)
0,5	9,49	0,5	10,99
1,0	14,99	1,0	17,99
2,5	39,99	2,5	33,99
5,0	60,90	5,0	77,99

- a) From the options given above, what is the cheapest bag of flour you can buy? Show all your calculations.
- b) From the options given above, what is the most expensive pack of sugar you can buy? Show all your calculations.
23. The director of a business shares the company's annual profits in a ratio of 5 : 2 as bonuses (5 parts go to him and 2 parts go to his employees). If the company's profit in a particular year is R430 899 and the director has six employees, calculate the respective bonuses for the director and one employee.
24. A netball team plays 31 matches. They win 18 of these matches. What is the ratio of their number of wins to their number of losses?
25. The ratio of boys to girls in a class is 9 : 7.
- a) If there are 14 girls in the class, how many boys are there?
- b) How many learners are in the class?
26. In a particular season the Blue Bulls won 8 games, the Lions won 14 games and the Sharks won 11 games. What is the ratio of wins of the Bulls and the Lions to the wins of the Sharks? Give your answer in its simplest form.
27. On average there are 40 sweets in a 300-g packet of sweets. The ratio of green sweets to yellow sweets is 5 : 3.
- a) How many of each colour sweet should there be in a packet?
- b) How many grams of sweets would be yellow?

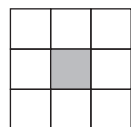
28. Mr and Mrs Smith are business partners. They agreed to share their profits in a ratio of 3 : 2. If their annual profit amounted to R52 000, how much did each receive?
29. A recipe for a cake specifies 30 g butter and 90 g flour.
- What is the ratio of butter to flour?
  - What is the ratio of flour to butter?
  - How much butter do you need if you have 300 g of flour?
  - How much flour do you need if you have 45 g of butter?
  - How much butter do you need if you have 78 g of flour?
  - What is the fraction of the butter's mass to the mass of the flour?
30. The table gives the numbers of teachers and learners at five schools.

School	Teachers	Learners
1	76	1 254
2	54	1 389
3	63	987
4	59	1 008
5	45	574

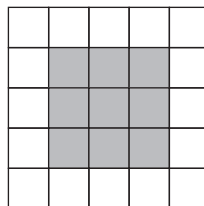
- Calculate, as a decimal fraction correct to two decimal places, the teacher-to-learner ratio for each school.
  - If a school has 70 teachers and the same teacher-to-learner ratio as school 3, how many learners are in that school, correct to the nearest whole number?
  - If a school has 1 148 learners and the same teacher-to-learner ratio as school 5, how many teachers are in that school?
  - Which school has the best teacher-to-learner ratio? Give a reason for your answer.
31. Greg looks at a toy shop's price list for a racing car.

Item	Cost price (R)	Selling price (R)	Profit (R)
Car		3 999,00	450,00
Petrol (per litre)	17,78		0,82
Car magazine	42,99	44,90	
Spare parts	57,64		12,86

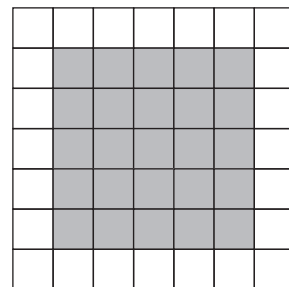
- Complete a copy of the table.
  - Write down the profit-to-cost price ratio for the toy car. Round off your answer to two decimal places.
  - How many litres of petrol does the shop owner need to sell to make the same profit as he does on selling one set of spare parts?
32. Study the pattern of squares. Does the ratio of white squares increase in the same ratio as the grey squares? Show how you obtained your answer by calculation.



Square 1



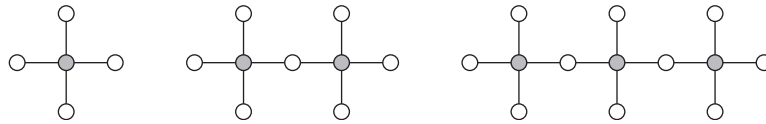
Square 2



Square 3



33. Look at the pattern of circles and lines.



- Does the ratio of grey to white circles remain the same as the pattern continues? Give a reason for your answer. Show your calculations.
  - Does the ratio of grey circles to lines remain the same?
34. The table shows the ratio of protein to fat to carbohydrates for different food types per 100 g. (The ratios are also given in grams.)

Food type	Protein : fat : carbohydrates
Banana	1,1 : 0 : 19,2
Brown bread	9,2 : 1,4 : 48,3
Butter	0,5 : 81,0 : 0
Roast chicken	24,8 : 5,4 : 0
Boiled potato	1,4 : 0 : 19,7
Full-cream milk	3,3 : 3,8 : 4,8

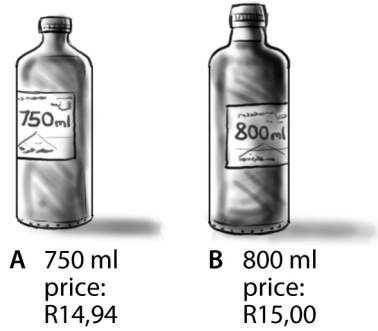
(Source: Manual of Nutrition, 1976)

- Which of these foods would you avoid if you were on a low-fat diet?
- How many bananas would you need to eat per day if you need at least 100 g of protein daily?
- For dinner you have 200 g of roast chicken, 50 g of potato and a glass (250 g) of milk. How many grams of fat, protein and carbohydrates are you consuming when you eat this dinner? Complete a copy of the table to help you with your calculations.

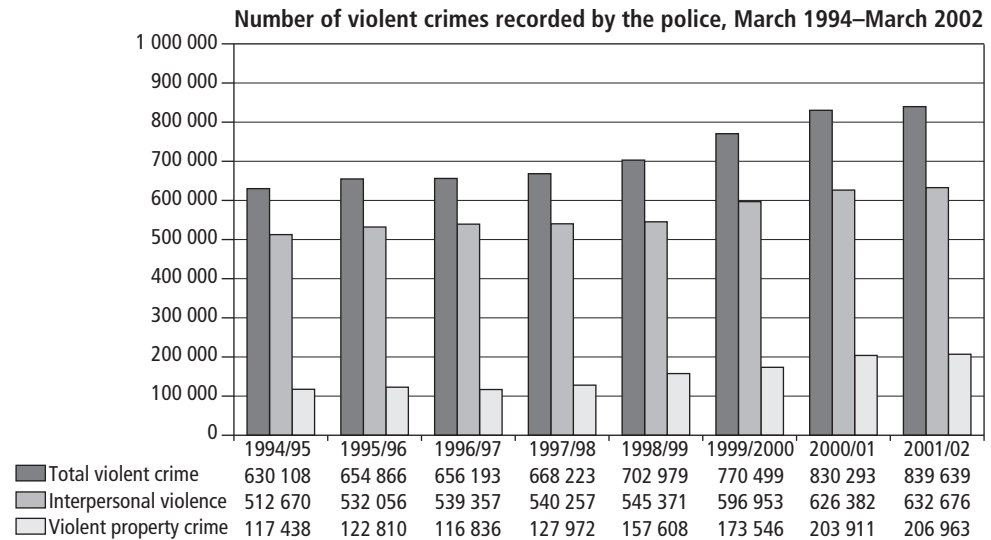
Food type	Fat (g)		Protein (g)		Carbohydrates (g)	
	100	200	100	200	100	200
Roast chicken						
Boiled potato						
Glass of milk						
Totals						

- The banana and boiled potato both contain no fat. A certain diet prescribes that your carbohydrate intake should exceed your protein intake. Which of these two food types have the better carbohydrate-to-protein ratio?
35. Alloys are made up of different metals. Bronze is an alloy. The bronze that is used to make coins is made up of copper, tin and zinc in the ratio of 46 : 3 : 1.
- How much of each metal would you need to make 1 kg of bronze?
  - If a coin weighs 23 g, how much tin is needed to make it?
36. Mr Shaik has a fish tank with five fish. He notices that he needs 60 g of fish food for his five fish per day.
- How much fish food would he need for 16 fish?
  - He is planning to go away for a few days and intends to feed his five fish 500 g of fish food. For how many days will the fish have enough food? Assume that the fish don't eat more than usual on a given day.
  - How much food do 12 fish need in seven days?

37. A manufacturer sells Goldie-Locks shampoo in two different bottles.
- Calculate which bottle gives the better value for money.
  - If you divided the content of the bigger bottle into five smaller containers and sold each one for R4,50, how much profit would you make?
  - Calculate the cost per millilitre for each smaller bottle.



38. Miriam cycles 84 km in three hours on a usual training day.
- What is the average speed at which Miriam cycles?
  - How far would Miriam cycle in two hours?
  - How far would she cycle in 45 minutes at this average speed?
  - How long would it take her to cycle  $74\frac{2}{3}$  km at this speed? Give your answer in hours and minutes.
39. The numbers of violent crimes in South Africa, as recorded by the police for 1994 to 2002 are shown on the graph.



(Source: [www.iss.co.za/Pubs/CrimeQ/No.2/2Fig1.jpg](http://www.iss.co.za/Pubs/CrimeQ/No.2/2Fig1.jpg))

- Did the crime rate increase or decrease from 1994 to 2002? Give a reason for your answer.
  - Approximate the percentage increase of total crimes between 1994/95 and 2001/02.
  - Calculate the percentage increase in crimes correct to two decimal places.
  - Was your approximation close to the real answer?
40. The availability of electricity in South Africa is a cause of concern. Every citizen should make an effort to conserve and save electricity wherever possible. Household electricity is charged at an average cost of 161,00c per kWh. The table on the next page shows how many kilowatts certain household appliances use per hour.

Electrical appliance	Kilowatts used per hour (kWh)	Cost for one hour (cents)
Iron	0,50	
Microwave oven	1,30	
Kettle	2,00	
Electric frying pan	1,50	
Oven at about 200 °C	2,00	
Large plate on hob at lowest setting	0,50	
Slow cooker	0,15	
Television set	0,30	
Tumble dryer	3,00	

**Note**

1 kWh = one unit of electricity (1 000 watts) used in one hour  
1 kW = 1 000 watts

- Calculate how much it will cost to use each appliance in the table above for one hour. Complete a copy of the table.
- Calculate the difference in cost between using the following appliances for one hour.
  - a microwave oven and a conventional oven
  - an electric frying pan and a slow cooker
  - a tumble dryer and drying washing on a washing line
- Calculate the percentage you save if you use the more cost-effective appliance.
  - microwave oven and conventional oven
  - electric frying pan and slow cooker
- Use the table below to calculate the cost of warm water if you shower or bath for each length of time.
  - shower for 3 minutes
  - shower for 15 minutes
  - bath in water that is 15 cm deep
  - bath in water 30 cm deep.

Cost of warm water	Water used	Cost (in cents)
Bath	12 cm deep	176,10
Shower	5 minutes	88,10

41. In 2007, about 13% of the government's annual budget of R62,4 billion was spent on paying social grants. South Africa paid social grants to over 16 million people in 2013, contributing R113 billion in 2013/14 to the income of low-income households.
- How much money was spent on paying social grants in 2007? Give your answer in scientific notation and write it out in words.
  - In the 2013/14 budget speech Minister Pravin Gordhan announced that in October 2014 new increases in social grants would be implemented. Look at the table below. What percentage increase did each grant/pension receive in 2014 compared to the benefit in 2007?

Social grants	Increase from 2007 to 2014
Old-age pension	from R820 to R1 260/month
Child support grant	from R190 to R300/month
Disability grant	from R820 to R1 260/month
Foster care grant	from R590 to R800/month
Care dependency grant	from R820 to R1 200/month

42. The N1 freeway between Johannesburg and Pretoria carries some of the highest traffic volumes in South Africa. About 157 000 vehicles travel on the N1 per day, and a traffic growth rate of 7% per year is predicted. Give all answers in scientific notation, correct to one decimal place.
- About how many vehicles travel on the N1 in one year?
  - Use your answer to question 42(a) to determine a growth rate of 7% p.a. in the number of vehicles that travel on the N1 in one year.
43. One of Saturn's rings, the G-ring, has an inner radius of 165 800 km and an outer radius of 173 800 km.
- What is the diameter of Saturn's G-ring?
  - What is the outer circumference of Saturn's G-ring? Give your answer in scientific notation, correct to two decimal places.
44. Write each value in scientific notation, correct to two decimal places.
- the mass of a dust particle is 0,000000000753 kg
  - a millionth of a second
  - the speed of light is 300 000 000 m/s
  - the Andromeda galaxy (the closest one to our Milky Way galaxy) contains at least 200 000 000 000 stars
  - the weight of an alpha particle that is emitted in the radioactive decay of Plutonium-239 is 0,000000000000000000000000006645 kg
45. The table shows the volume of high-level radioactive waste stored in tanks, bins and capsules over a number of years.

Year	Volume stored (m <sup>3</sup> )	Volume in scientific notation
1990	398 500	
1991	396 500	
1992	398 300	
1993	403 500	
1994	378 400	

- Complete a copy of the table by giving the volume in scientific notation, correct to two decimal places.
  - What is the total volume of high-level radioactive waste stored from 1990 to 1994? Give your answer in scientific notation, correct to three decimal places.
46. Imports in South Africa increased to R89 890 million in July of 2013 from R75 921 million in June 2013. Imports in South Africa are reported by the South African Revenue Service (SARS). South Africa imported on average R11 514.26 million from 1957 to 2013. Imports reached an all-time high of R89 890 million in July 2013 and a record low of R66,10 million in September 1961. South Africa's main imports are: fuel (24% of total imports), motor vehicles (10%), electronics (3%), pharmaceuticals (2%), and food and scientific instruments. Main trading partners are: Germany (11% of total imports), China (11%), United States of America (8%), Saudi Arabia (6%), Japan (6%), and United Kingdom, Iran and Angola.
- (Source: [www.tradingeconomics.com/south-africa/imports](http://www.tradingeconomics.com/south-africa/imports))*
- Calculate the percentage increase in imports to South Africa from June 2013 to July 2013.
  - If 24% of total imports are fuel, calculate the value of fuel imports in July 2013 (based on the all-time high import value of R89 890 million).

**Remember!**

1 kg = 1 000 g  
1 g = 1 000 mg

**Remember!**

When temperatures are given in Kelvin, the degree sign is not used:  
1 °C = 274,15 K

**Note**

Any orbit must have a conic-section shape. Orbital eccentricity is a measure of how much this conic shape deviates from a circle.

47. What is the difference in mass between an African male elephant (about 600 kg) and an ant (0,01 mg)? Give your answer in standard notation and scientific notation.

48. The table gives information about the moon in standard notation.

a) Rewrite all the values in the table in scientific notation, rounding your answers off to two decimal places.

<b>Average distance of moon from earth</b>	384 400 km
<b>Mass of the moon</b>	73 483 000 000 000 000 000 000 kg
<b>Surface area of the moon</b>	37 932 330 km <sup>2</sup>
<b>Orbital eccentricity</b>	0,05490
<b>Orbital circumference</b>	2 290 000 km

b) The surface temperature on the moon is 40 K minimum and 396 K maximum. What are the minimum and maximum temperatures on the moon in degrees Celsius?

49. Objects have mass because they have gravitational pull on Earth. An object with a particular mass on Earth will have a different mass on the moon, or on Jupiter, as the gravitational pull of these bodies differs. If someone has a mass of 75 kg on Earth, the same person’s mass would be about 10,7 kg on the moon and 161,25 kg on Jupiter.

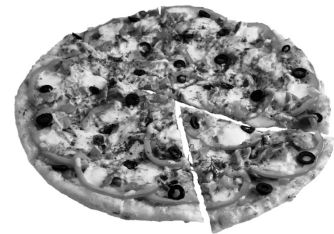
- a) If a car has a mass of 1,2 tons on earth, what would the mass be in kilograms on the moon? Give your answer in scientific notation, rounding off to two decimal places.
- b) If an object has a mass of 67 kg on Jupiter, what would the mass of the object be in grams on Earth? Round off your answer to the nearest gram.
- c) If a bottle of tomato sauce has a mass of 0,2 kg on the moon, give the mass of the same bottle on Jupiter to the nearest kilogram.

50. Pizzas are one of the most popular fast-food meals for both young and old. Millions of pizzas are sold every month by different pizza companies.

**Top two pizza chains sell two million pizzas per month**

**Ingredients used:**

- 1 000 000 kg flour
- 90 000 ℓ olive oil
- 680 000 ℓ water
- 460 000 kg mozzarella
- 100 000 ℓ tomato paste



**28:** Number of football fields a month’s pizza production will cover

**600 km:** distance pizzas cover if laid end-to-end (the distance from Johannesburg to Durban or Bloemfontein to East London)

**3,7 million calories:** amount of energy that two million pizzas produce, which will take a 70-kg person 3,2 million hours to run off at 16 km/h!

**20 km:** height of stack if pizzas were stacked one on top of the other

- a) How much of each ingredient is used to make two million pizzas? Give your answer in scientific notation.
- b) If there are 3,7 million calories in two million pizzas, how many calories are there in one pizza?