**Problem Solving**

**1) Length**

1) Janet ran 2km every day during October. What is the total distance she ran?

2) What would 11 lengths of timber, each 5 meters long, measure if they were placed end to end?

3) James is 154cm tall, Larry is 140cm and Neil is 160cm. What is their combined height?

4) The length of each skipping rope is 150cm. How many meters of rope are needed to make 6 skipping ropes?

5) Each day Vallery swims 30 laps of the 20-meter pool. How far is this in kilometers?

6) The distance by road between two towns is 550km. By plane it is ¼ shorter. What s the distance by air?

7) A chain is 15cm long and is comprised of 30links. What is the length of each link in millimeters?

8) My backyard is 28 meters wide and 18 meters deep on each side. How many metres of fencing will I require to fence it off (HINT- take care with this problem)?

**2) Time, Speed**

1) An automatic timing device was set at 5:30pm to come on in 4 1/3 hours. At what time will it come on?

2) I left home at 9am. My walk to the station took 14minutes and my train trip 30minutes. If I had to wait 7 minutes at the station for the train, when did I arrive at my destination?

3) The express covered the distance of 960km in 8 hours. What was its average speed per hour?

4) Dad commenced a fortnight’s holiday on Tuesday the 12th of September. When does he have to return to work?

5) During the car rally, the car was driven for 36 hours. If the average speed was 75km/h how far did the car travel altogether?

6) James has part-time job. On Tuesday he worked 4 hours 20 minutes, on Wednesday 3 hours 30 minutes and on Friday 4 ½ hours.

 a) How much did he work altogether?

 b) How much will he receive if he is paid $4.00 per hour?

7) Mr Dean has to cook the meat for 40 minutes per kilogram. How long will he need to cook the meat if it weighs 2.5kg?

8) James completes a marathon, a distance of 52km in 3 hours. What was his average speed in km/h?

**3) Temperature**

1) The temperature rose 4`C every hour for 6 hours from 9.00am. What was the temperature at 2.00pm, if it was 20`C at 9.00am?

2) Last Saturday the water temperature was three-quarters of the atmospheric temperature. What was the water temperature if the atmospheric temperature was 35`C?

3) Jupiter is covered by clouds. At a certain level in the cloud cover it is 150`C. Towards the center it is 4500`C. What is the difference in temperature between the two areas?

4) The surface temperature of ‘Planet Y’ is 3400`C. However the core of the planet is 4 times as hot. What temperature would this be?

5) The day time temperature on the planet Mars is about 425`C. At night it is one-eleventh of this temperature. What is the night temperature?

6) What is the difference between ‘Planet Y’s’ temperature of 3400`C and Mars’ temperature of 425`C?

7) Adelaide’s temperature at noon was 42.5`C. What was the temperature on Venus if it was ten times Adelaide’s temperature?

8) The sunny side of Saturn has a temperature of about 650`C and the dark side is about 311`C cooler. What is the temperature of the dark side?

**4) Mass**

1) Each cookie has a mass of 4 grams. What is the mass of 2 dozen cookies?

2) How many 80kg sacks of potatoes can be made up from a load with a mass of 1200kg?

3) James and Joyce are at one end of the see-saw and Mark and Antony are at the other end. James has a mass of 40kg, Joyce has a mass of 43kg and Mark a mass of 30kg. What is Antony’s mass if the scale is balanced?

4) Each wash I use 35g of ‘Cleano’. How many washes can I get with a 980g bag?

5) A sportsperson has a mass 86kg. If he loses 0.5kg per week for 14 weeks, what will be his new mass?

6) James’ mass is 41kg, Brian’s mass is 55kg, John’s mass is 56kg and Fred’s mass is 42 kg. What is there average mass?

7) How much did I pay for a 1.5kg pack of steaks at $5.20 a kilogram and a 2.5kg pack of sausages at $1.40 per kilogram? What is my change from $30?

8) If 3 dozen melons have a combined mass of 144kg, what is the average mass of each melon?

**5) Graphs**

1) What is the average height of the children and how many children are above the average height?

2) If Antony’s younger sister is half his height, what is his sister’s height?

3) If Michael grows 15cm to reach his full height, what will that be?

4) Sally’s sister is 2/5 of the height of Kim. What is her height?

5) if tis thought that Michaels is 5/6 of his expected height. What height is he expected to reach?

6) What was Antony’s height 3 years ago if it was 2/5 of his present height?

**6) Perimeter and Area**

1) A rectangular paddock is 170 meters long and 90 meters wide.

a) How many meters of fencing are required to enclose the area?

b) If the fencing of the paddock is $20 per meter, how much will the fencing cost?

2) Find the perimeter in kilometers of a paddock 1800m long and 2000m wide.

3) A sheet of cardboard is 80cm long and 50cm wide. Find its area in cm2.

4) Andrew designed a birthday card 20cm X 15cm. If a picture was to cover 1/3 of the card, how much space would be left for verse?

5) Fifth grade decided to construct a set of 6 handball courts. If each court is to be 3meters X 2 meters, what amount of space is required for the courts?

6) What is the size of Western Australia if it is 800 000 square kilometers larger than Queensland which is 1 893 923 square kilometers?

7) South Australia is approximately 8 times the size of Tasmania. NSW is approximately 10 times the size of Tasmania. If the area of the mainland is Tasmania is 42 000 km2.

a) What is the size of South Australia

b) What is the area of NSW?

**7) Fractions**

1) Lengths of timber 2.5 meters long are being sawn into tenths. What is the length of each piece?

2) The cost of our electricity bill was $130.24. If the next bill showed an increase of ¼, what is the bill?

3) Rhode Island Caravan Park has 243 sites. One third of these are occupied permanently

a) How many are available for temporary hire?

b) if the permanents pay $14 per week, how much money is received by the owner from the permanent residents?

3) The youth club dance received $1320 in admittance money. If 3/5 of this was used to pay expenses, what was the profit from the dance?

4) On a full tank of petrol a car can travel 450km. How far can it travel if the tank is only 3/8 full?

5) How much would you pay for 4 ¾ kg of meat at $2.40 per kilogram?

6) The singer’s agent takes 1/10 of the singer’s fee. How much will the agent receive if the singer performed on Friday for $1200, Saturday $3000 and Sunday $1250.

**8) Decimals**

1) On an average spring day a piece of steel is 2.01 meters long. During winter it contracts 0.03 meters. How long is the piece of steel on an average winter’s day?

2) Daniel was 45.5cm when born. He is now two times that height. What is his height now?

3) The race record was 1 hour 13 minutes and 4.2 seconds. This time was bettered by 1.2 seconds. What is the new record?

4) How long would 14 lengths of rope each 3.5 metres long measure if placed end to end?

5) The base line of my graph is 10cm. If the line is to be divided into 8 equal intervals, what is the length of each interval?

6) Our car can travel 12.3km on a litre of petrol. How far should it travel on 53 litres of petrol?

7) Each egg had a mass of 48.32 grams. What would be the mass of a dozen of these eggs?

8) The tree’s shadow was 0.45metres at noon. Later that afternoon it was 5 times longer. What was the new length of the shadow?

**9) Percentages**

1) Michael’s father is to receive a 20% pay rise. At present he earns $200 per week. How much will he receive hafter he gets the rise?

2) Andrew has invested $200 at 10% interest for a year. How much will he have invested at the end of the year?

3) James has read 3/5 of a book. What percentage of the story has he read?

4) 85% of the 120 children in Year 5 were taken on a trip to Canberra. How many children was this?

5) Motor vehicles at ‘Big Savings Car Sales’ are being offered at 20% less than the advertised price. How much would a car marked $5000 cost with the discount?

6) When the ice melted it shrank by 12%. Originally it consisted of 24000ml. How much water was collected after the ice was melted?

7) Antony scored 62 in his first test. His next test showed an improvement of 50%. What was his score in the second test?

8) Mark placed a one-liter container full of water in the sun. If 20% evaporated, how much water was left in the container.

**10) Volume**

1) On Tuesday the garage sold 3200 litres of petrol. If there were 80 customers what was the average amount of petrol bought by each customer?

2) James is to take 20ml of medicine every 4 hours. If he had his first dose at 9.30am, how much will he have at by 9.31pm?

3) Two fifths of a bottle have been used. How much is left if the bottle originally contained 360mls

4) To cater for a school dance, it was estimated that each child would drink 3 cups of fruit juice. Each cup holds 320mLs. How many litres of fruit juice would have to be ordered if 120 children will attend?

5) An engine produces 0.85 litres of steam per hour. How many litres would be produced in a 48 hour period?

6) The volume of a container was 83 cubic meters until it was extended/ The extension was 4 metres long, 3 metres wide and 3 metres high. What is the volume of the container now?

7) Find the volume of a fish tank measuring 1m 30cm long, 60cm wide and 40cm high.

8) A service station has a 30 000 litre storage tank. At the start of the month if it was full. At the end of the month it was 40% full. During the month it was refilled twice. How many litres of petrol have been sold?

**11) Money**

1) The price of the bicycle was $190, but I was given a 20% discount. How much did I have to pay?

2) Jason went shopping. How much did it cost him if he bought the following items:

1 potato peeler 75c

3kg of potatoes at 14c a kg

3kg of onions 53c a kg

4kg of pumpkin at 20c a kg

1 apple pie at $1.20

12 sausage rolls at 17c each

3) Mr Roy owns a shoe store. On each pair of shoes he makes a profit of $6.00

a) What price would he have paid for a pair of shoes that he sold for $23

b) If he sold 243 pairs of shoes during the week, what would be his profit?

4) Mr O’Leary organized a dance. To hire the hall cost $195, drinks cost $300, food $230 and musicians $240. 83 people bought tickets at $18 each.

a) How much was received from ticket sales?

b) How much profit did Mr O’Leary make?

5) To book a tennis court for 17 weeks costs $68.50. How much is this per week?

6) A television advertisement costs $700 for 20 seconds before 7 o’clock and $2500 for 30 seconds after 7 o’clock. If a company advertised for 2 ½ minutes before 7 pm and 2 ½ minutes after 7pm, what is the total cost of advertisement?

**12) Number Facts**

1) Seventeen spectators sit on each bench. How many spectators can be seated on 123 benches?

2) A survey of students showed that 2/5 of them chose Science as their favourite subject. How many of 300 students chose science?

3) The average number of passengers on the ‘Indian Star’ throughout the year was 240.

a) How many people went on this trip throughout the year if it undertook a cruise every fortnight?

b) Next year a 10% increase in the number of passengers is expected. How many passengers are expected next year on an average cruise?

4) A carton containing a gross of pens has 12 different colours. If there are equal numbers of each colour, how many red pens should there be? (HINT- a gross is equal to 144).

5) A wine producer produced 5894 litres of wine in March, 6960 in April, 10 005 in May and 9621 in June. How many 10 litre barrels are required to store the wine?

6) In 1985 the population of Woolamaloo was 11 514. The present population is 20% higher.

a) What is the population now?

b) If 1/3 are children, how many children live in this town?

**13) Length**

1) Warning signs are placed every 240m on a dangerous stretch of road. If we noticed 10 of these signs, how long is the stretch of road?

2) Two wall units, one 3660mm and the other 3750mm are placed along a wall 9m long. How much space is left?

3) At the start of the year James was 15cm shorter than his mother. Now he is only 3cm shorter than mum. If James is 159cm, how tall is his mum?

4) My car will travel 12km per litre of petrol. How many litres of petrol would be used on a 1200km trip?

5) How far does Jim swim in a year if every day he swims 13 laps of the 70m pool? Express your answer in kilometers.

6) Scotty’s step is 75.5cm. How far will he travel if he takes 5000 steps? Express your answer in kilometres and metres.

7) During our holiday we drove 650km on the first day, 330km on the second day, 230km on the third day and 670km on the fourth day.

a) What was the total distance covered?

b) What was the average daily distance travelled?

**14) Time**

1) Workers at the factory are given 9 weeks’ long service leave after 10 years’ service with an additional 3 week’s leave for each year after that. How much leave would a worker have after working for 15 years?

2) The Olympic record was 3 hours, 30 minutes and 32.6seconds. If a competitor took 87 seconds off that time, what is the new record?

3) A carrier takes an average of 45 minutes to complete a delivery. How many hours will it take him to complete 14 such deliveries?

4) The jet’s average speed is 580km/h. How long would it take to cover a distance of 955km?

5) A racing driver can complete one circuit of the track in 6 minutes and 20 seconds. How long should it take him to complete 46 laps?

6) After driving for 6 hours at an average speed of 80km/h we still had 240km to go. How long is our trip?

7) A machine ‘serves’ tennis balls at the rate of one every 20 seconds. How many balls can be served in an hour?

8) A shearer shears 108 sheep a day. How long would it take him to shear 6588?

**15) Temperature**

1) The office air conditioner is set at 30`C. Monday’s temperature was 37.5`C. By how much did the air conditioner have to cool the office air?

2) To melt aluminum for recycling requires a temperature of 760`C. If the smelting oven is set at 123`C at present, by how mnay degrees does it have to be increased to reach 670`C?

3) What is the temperature inside the glass house if it is 1.5 times the outside temperature of 23`C?

4) Scientists reported that the temperature on ‘Planet Y’ was one-ninth of that on Mars. If Mars’ temperature is estimated to be 245`C, what was the temperature on ‘Planet Y’?

5) Before the hit the temperature was 6`C above average. After it came it was 7`C below average. What was the difference in temperature?

6) Water boils at 80`C. The temperature at the centre of the Earth is 300 times greater than this. What is the temperature of the Earth’s centre?

7) Our oven takes 10 minutes to reach a temperature of 180`C and 4 minutes for every 40`C rise after that. What will the temperature be after 30minutes?

8) To melt a piece of iron requires a temperature of 1623`C. To melt a diamond the temperature needs to be 2500`C. What is the difference between the melting points of the substances?

**16) Mass**

1) The combined mass of the twelve girls is 720kg. What is the average mass of each player.

2) A transport vehicle weighs 6 tonnes. If it is also carrying three containers each weighing 1.86 tonnes, what is the total mass of the vehicle and its load?

3) Find the cost of 3.5kg of steach at $5.34 a kg, 2kg of sausages at $3.97 a kg and 1.5kg of chops at $3.24 a kg.

4) Which team should win the Tug-o-War, the Red team with members weighting 34kg, 24kg, 56kg and 89kg or the Blue team with members weighing 34kg, 58kg, 38kg and 90kg?

5) James has to place powder into 80 gram packets. How many packets can he fill if he is given 12 1/3 kg of powder?

6) The maximum load permitted on a truck is 4 tonnes.

a) What would be the mass of 75 containers each 45.6kg?

b) Would this load be permitted on the truck

7) A person weighed 89kg. After dieting for 9 weeks the person now weighs 86kg. What is the average mass lost per week?

8) Breakfast cereal is made using these amounts of ingredients: 400g of mixed fruit, 240g of apricots, 400g of wheat and 260g of bran. How many 250g packets can be filled from this mixture?

**17) Graphs**

1) How much will Michael have after eight weeks?

2) If Sally and Jess are sisters, how much do their parents pay in pocket money per week?

3) After 13 weeks of saving, how much will Antony have?

4) What is the total amount paid by the parents to the children?

5) How much will David have at the end of the year?

6) Antony, Michael and David all belong to the one family How much do their parents pay in pocket money per week?

**19) Perimeter, area**

1) Tiles are $9.30 a square metre. How much will it cost to cover an area 15 metres long and 12 metres wide?

2) Roy is going to cut a sheet of cardboard 64 square centimetres into 8 equal pieces. How many equal sized pieces can be cut out of the sheet?

3) Jenny is trying to find the total area of Australia. If the area of the mainland is 53 123 9433 km2  and the area of Tasmania is 32 866km2, what is the area of Australia?

4) What is the size of Mr and Mrs Young’s block of land if it is 43 metres long and 35 metres wide?

5) To carpet a room costs $43 per square meter. Find the cost of carpeting the following:

a) Lounge room- 12m X 7.4m

b) Bedroom- 8m X 5.5m

c) T.V. room- 4.5 X 6m

d) What is the total cost?

6) If the total area of a house containing 12 rooms is 175m2, what is the average size of each room?

7) Square mirror tiles are 19cm wide? How many tiles are needed to cover an area 165cm high and 350cm wide?

**19) Fractions**

1) The water tank on a property has a capacity of 1500 Litres. How many litres are in the container if its 3/5 full?

2) 7/25 of Mr James’ wage is taken in taxes. If his yearly salary is $23,000, how much would he expect to pay in taxes?

3) Mr and Mrs Jones took their two children to the movies. If the cost of tickets was $20.50 and the children were half price, how much was the price of a child’s ticket?

4) A TV program was advertised to last an hour. If ¼ of the time was taken up by advertisments, how many minutes of the actual program were shown?

5) Mr Johnson is paid $9.00 per hour for a normal 35 hour week. For each hour after that he is paid 2.5 times the normal rate. If he worked 46 hours last week, how much was he paid?

6) Of the $960 received at the fete, 7 1/2 was used to pay expenses. What was the profit?

7) At this stage the tree, which is 26 metres tall is 3/5 of its expected height. To what height is it expected to grow?

8) Of the 36 000 spectators at the match, it was estimated that 1/8 had free passes.

a) How many were admitted free?

b) If the admission price was $5.00, how much would have been received from the paying spectators?

**20) Decimals**

1) James’ record for the race is 3 minutes 32.5seconds. If he took 3.05 seconds off this time, what is his new record?

2) The normal route is 17.56km. However, the short cut reduces this distance by 3.5km. What is the length of the short cut?

3) Sixteen pieces of steel each 12.34 metres long are to be joined together. What is the total length of the steel?

4) The mass of one orange juice container is 1.76kg. What would be the mass of thirty-six containers?

5) The athlete was sponsored at a rate of $4.50 per km. How much will she collect if she ran 24.5km?

6) In the library an entire wall is taken up by cupboards. How long is the wall if the cupboards are 2.34m, 5.60m, 1.09m, 2.04m and 1.33m?

7) Find the average of the following lengths: 85.9cm, 23.98cm, 78.09cm, 88.90cm, 90cm, and 23.85cm.

8) If 0.679 of a telegraph pole is above ground and 5 metres is below the ground, what is the total length of the pole?

**21) Percentages**

1) $2000 was invested at 12% per annum.

a) How much interest will be earned during the year?

b) How much will the investor have in the account at the end of the year?

2) After a tune-up Jack’s car went 30% further on a full tank of petrol. Before the tune-up he could go 460km. How far can he go now on a full tank?

3) The spelling test was out of 24. Allison’s score was 21. What is her score as a percentage?

4) A youth club hired a coach. The normal cost is $270.

a) What would be the cost if they were given an 8% discount?

b) If the cost was to be shared among 26 people, what would be the cost per person?

5) At the last election 45% of the voters voted for the Conservative party, 26% voted for the Republican Party and the remainder voted for the Environmental Party.

a) What percentage of people voted for the Environmental Party?

b) If there are 8000 people in the electorate, how many people voted for the Conservative party?

6) At the last census the population of Lindy was 34 000. It is estimated that this has increased 6 percent since then. What is the estimated population of Lindy now?

**22) Volume**

1) A water tank with a capacity of 14 000 litres is to be replaced by a larger one with 3 ¾ times the capacity. What is the capacity of the newer tank?

2) Michelle was told to take 14ml of medicine four times a day. How many days will it take her to finish the bottle if it contains 336ml?

3) The lawn fertilizer consists of 2 parts fertilizer and 5 parts water. How many milliliters of water would be contained in a bottle containing 3 L?

4) The floor area of a room is 37m2. If the height is 3m, what is the area of the room?

5) How many cubic metres of concrete will I need to concrete a patio which is 12m long, 3m wide and 20cm deep?

6) How much will the concrete for the above patio cost if it is $95.60 per cubic metre?

7) How many 350ml containers can be filled from a supply of 60 000 litres?

8) Find the volume of a container 7.54 metres long, 3.4 metres wide and 3.6 metres high.

**23) Money, Interest and Commission**

1) Fifteen people shared $26 890. How much did each person receive?

2) A shopkeeper makes an average profit of 6 cents on each piece of fruit he sells. If his profit was $340.32, how many pieces of fruit did he sell?

3) A youth club organized a dance. Tickets were $3.45.

a) If 310 people bought tickets, how much was received from tickets?

b) If expenditure was $250, what was the profit?

4) Mr Jones’ new job pays $345.50 per week. How much is his annual salary?

5) Krystal invested $6500 at a rate of 20% pa.

a) How much interest will she earn in one year?

b) If she adds her first year’s interest to her original investment, how much will she have at the end of the second year?

6) An agent charges 3.5% commission. How much would he receive for selling 3500 sheep at $15 a head?

7) Mr and Mrs Johnson spend a week at a motel during their holiday. Their room cost $34.50 a night. They ordered breakfast every day which was $2.35 each. How much was their motel bill?

8) Mr Jones invested $3500 for 14 months at the 13% p.a. How much would he have in his account at the end of this period?

**24) Number Facts**

1) Eighteen buses were ordered to take the club supporters to the Grand Final. If each bus carried 96 passengers each paying 40 cents, how much money was received?

2) Each day at the factory produces 458 motor vehicles. How many cars would be produced in a 5 week period. This factory works an 11 day fortnight?

3) Michael’s batting average after 31 innings is 46. How many runs did he score altogether?

4) One-fifth of the 35 450 residents in our town claimed the 3 trees they were permitted from the council. How many trees were issued?

5) A printing company produced 43 500 books last month. Half of these books required 4 staples, the rest 3 staples. How many staples were issued?

6) In our class of 30 children, 14 are girls. If each boy was away 7 times during each year, what is the total number of boys’ absences?

7) James and Marc Antony were given 128 stamps by their uncle. James was allowed 6 out of every 9. How many stamps did each boy receive?

8) A motel with 39 rooms was painted. Each room required 3.75 litres of paint. If the paint cost $5.40 a litre, what was the total cost of the paint?

**25) Length**

1) Tissues are 22.6cm long. What would be the length of a packet of 300 if they were placed end to end?

2) James is 140cm tall, Justin is 138cm and Jones is 156cm.

a) What is their combined height?

b) What is their average height?

3) This time last year Michael was 103cm. Since then he has grown at the rate of 3.85cm every two months. How tall is he now?

4) Every day Michael completes 130 laps of the 40 metre pool. How many kilometres does this equal?

5) Guttering for a house comes in 6.5 metre lengths. How many lengths are required for a house whose eaves are 25m, 27m, 21m and 19m.

6) On a scale map 1cm represents 50km. What distance would be represented by a line 16.5cm long?

7) The average length of a new pencil is 185mm. How many new pencils could be produced from 370cm of wood?

8) A telegraph pole is 30metres long. If 0.725 is above the ground, what is the length of the section below the ground?

**26) Time**

1) Find the cost of twelve minute long distance telephone calls if the cost is $2.40 for 3 minutes.

2) A flight from Sydney to Perth took 5 hours 30 minutes. Perth’s time is 3 hours behind Sydney’s. If the flight departed Sydney at 9.00am, what time did it arrive at Perth?

3) A ship left Sydney on 19th June and returned on the 21st September. How long did the cruise last?

4) How long would it take to travel a distance of 650km at an average speed of 90km/h? Answer to be expressed in hours.

5) Each degree of longitude is equivalent of 3 minutes. If it is 9.00am at a place 240`E, what time will it be at a place 40`E? Remember the sun rises in the east and sets in the west?

6) A side of beef is to be cooked on a rotisserie. The butcher suggested it be cooked for 30 minutes per kilogram. If it weighs 16.5 kg, for how long should it be cooked?

7) A security guard commenced duty at 0130 hours. If he completed his shift 14 ½ hours later, what time was it?

8) The Four man relay team completed the race in 48.7 seconds. If the first three runners each took the same time of 12.4 seconds, how long did the last runner take?

**27) Temperature**

1) What was the average temperature for the week if the temperatures were 32.5`C, 27.8`C, 19`C, 28`C, 25.6`C, 20`C and 23.4`C?

2) What is the difference between the water temperature and the atmospheric temperature if the water temperature is 18.5` and the atmospheric temperature is 22.5`C?

3) What was the temperature inside the glass house if it is 1.5 times the outside temperature of 19.7`C?

4) What is the estimated temperature of the planet Mercury if it is ten times the average January temperature of 34`C in our town?

5) Kev notied that the temperature today was 34`C. What is the temperature at the centre of the Earth if it is 900 times greater than today’s temperature?

6) After the ‘northerly’ hit, the temperature fell by 6`C in the first half hour and a further 9`C in the next half hour. What was the temperature earlier if it is now 19`C?

7) The air conditioner lowered the room temperature of 34.5`C by 20%. What was the new temperature?

8) At 9.00am the temperature was 18.5`C. At noon the temperature was 29`C. What was the average hourly increase?

**28) Mass**

1) What is the total mass of a truck and its load if the truck has a mass of 3 450kg and is carrying 6 containers each with a mass of 420kg?

2) How many 6kg packets of potatoes can be made up from a shipment of 3 tonnes?

3) If the average mass of each player in the G.F.L team is 87.4kg, what would be their aggregate mass? There are 20 players in a team?

4) Find the cost of 2kg 600g of roast beef at $7.60 a kg.

5) During an experiment Stout recorded a mass of 20 litres of liquid which was 6.7kg. What would you assume the mass of 2 litres to be?

6) Postage rates have been set at 40c for a letter up to 40 milligrams and 4c extra for every milligram above 30mg. How much would you be charged for a letter with a mass of 47mg?

7) What is the mass of a load on a truck if it contains 35 drumms each with a mass of 80kg, a tractor with a mass of 3 1/3 tonnes and a ride-on mower with a mass of 95kg?

**29) Area**

1) The council recently purchased three blocks of land which it plans to turn into a park. What will be the area of the park if one bloc is 34 metres long and 37 metres wide and the other is 54 metres long and 32 metres wide?

2) The Earth consists of land and water. The total area of the Earth is 310 000 000km2. How much is land if 456 000 000km2 is water?

3) My garden is 12.3 metres long and 6.3 metres wide.

a) What is the area of the plot?

b) How many metres of rope will be needed to enclose the garden?

4) The total area of a notice board is 23.89m2. If ½ of this is vacant space, what area is being used?

5) What is the difference in the area of Australia and Canada if Australia is 8 234 589km2 and Canada is 9 938 123km2?

6) My backyard measures 67 metres by 30 metres. If I pave an area 10 metres by 5 metres, how much of my backyard is unpaved?

7) A piece of cardboard 56cm long and 40 cm wide has a piece 20cm long and 10cm wide cut out of it. What will be the area of the cardboard now?

8) A wheat farmer obtains a yield of 7.5 tonnes per hectare.

a) How many tonnes of wheat will be obtained from an area 600m by 200m?

b) How much will the farmer receive if he is paid $240 per tonne?

**30) Decimals**

1) Up until Thursday only 0.913mm of rain had fallen but by Saturday this amount had been quadrupled. How much rain had been recorded on Saturday?

2) A fisherman sold 22.5kg of fish at $7.60 a kg. How much did he receive?

3) Petrol is 64.8 cents a litre. How much would 50 litres cost?

4) A chemical analyst is preparing a new paint stripper. Each litre of the pain stripper requires 0.314 litres of turp. How many litres of turp are required to produce 1000 litres of paint stripper?

5) The following heights are: Jim 2.05m, Jo 0.89m, Bill 0.86m and Saul 1.2m. What is their average height?

6) A piece of conduit 40.32 metres long is to be cut into 16 equal lengths. What will be the length of each piece?

7) Michael’s record for the race was 6 minutes 40.89seconds. If she reduced this by 5.6 seconds, what is the new record?

8) How much did Mum pay for a length of timber measuring 4.56 metres if it cost $4.20 a metre?

**31) Percentages**

1) A stereo is priced at $530. What would I pay for it if I am given a 15% discount?

2) Mr Johnson has been told to reduce his weight by 20%. What should his weight be if it is 98kg now?

3) During the season our team won 56% of our games. How many games did we win if there were 26 games?

4) ‘All stock 43 ½ % off.’ How much would I pay for a lounge suit normally costing $860?

5) Following its ‘tune-up’ my car has shown an improvement of 20%. Before it would travel 500km on a full tank of petrol. How far does it travel on a full tank now?

6) How many people in our school can speak two languages if a recent survey found that 20% of the 960 children could speak two or more languages?

7) Eighty percent of the children went on the excursion. If 36 stayed at school, how many went?

8) When planning our vacation we decided to drive part of the 2400km trip at night. If we drove 60% at night, how many kilometres did we do during the day?

**32) Fractions**

1) The price of a television set is $650 and the price of a video recorder is $900. For a customer buying both, a reduction of one-eighth of the price is given. How much would a customer pay if she bought a television set and a video recorder?

2) The State Government said that they would make a donation equivalent to one-third of the amount received on the night of the concert. If $1890 was received, how much will the Government donate?

3) Mr James receives an annual salary of $60 000. 3/10 of this is paid in taxes. How much does he receive after tax?

4) Of the 984 people at the theatre, one-eighth were admitted free. How many people paid for their tickets?

5) Because he worked during the long weekend Mr Johnson was paid 2 ¼ times his normal pay of $340. What amount of pay did he receive?

6) A water tank has a capacity of 1660 litres. If there are 860 litres in the tank, what fraction of the tank remains empty?

7) Dad bought a car for $13 000. He paid a deposit of 1/5 of the total value and decided to pay the balance over a period of 48 months. How much did he have to pay each month?

8) The scale on an atlas showed 3cm equal to 60km. How many centimeters would a line representing 360km be?

**33) Volume, Capacity**

1) What is the volume of a room if it is 8 metres long, 5 metres wide and 2.5 metres high?

2) Each of the 6 storage tanks at a garage has a capacity of 60 000 litres. If one was full and the others were each filled to the 75% mark, how much petrol is being stored?

3) If 4 oranges produce 250ml of juice, how many oranges are required to produce 2 L?

4) The district reservoir is filled to 4/9 of its capacity of 540 000 kilolitres. How much water is being stored at present?

5) Farmer Bob’s water tank had a capacity of 3400 litres. He replaced it with a tank that had a capacity of 3 ¼ times the capacity of the original tank. How mnay litres does the new tank hold?

6) My tap is leaking at a rate of 0.6ml per hour. If unattended how much water could be wasted over a period of one week?

7) Chris and Lilly are constructing a vegetable plot. How many cubic metres of soil will they need if their garden is 6m long, 2.5m wide and 2m deep?

8) Concrete costs $95 a cubic metre. Find the cost of concreting the foundations of a construction 20 metres long, 4 metres wide and 30 centimeters deep.

**34) Money**

1) The ‘Denim and Silk’ boutique sold $5689.89 worth of merchandise last week. What is the profit if expenditure involved wages of $1300, advertising $240, electricity $20 and rent $100?

2) To hire a bus for an excursion is $86.50. How much will each of the 50 children pay?

3) Suzanne’s weekly wage is $430 of which $80 is paid in taxes. What is her net salary after tax has been deducted?

4) Find the interest on $4500 invested for 18 months at 14% per annum.

5) The home building of a company requires a deposit of 12% on all homes it sells. If Mark and Karen are buying a home valued at $98 300 and have $5600, how much more do they need for a deposit?

6) Dave collects aluminum cans. He receives 2.5 cents for each can. How much will he receive if he collects 3456 cans?

7) An artist asked an agent to sell some of his paintings. The agent’s fee is 11.5%. How much will the agent receive if he sold three paintings for $3400, $2389 and $1890?

8) Jenny invested $98 at 13% per annum for 9 months. How much more interest did she receive than Michael who invested the same amount at 10% for 7 months?