Year 6

1. Perth and Collie are 200km apart. Claire leaves Perth and travels 50km towards Collie. What percentage of the trip has Claire completed?
   1. 25%
2. On his second birthday, Wen’s mother measured his height as 92cm. on the same day, his big sister Minh’s height was 1.3m. What was the difference in centimetres between their heights?
   1. 38cm
3. Cyrus bought a salad roll and a juice which cost $3.20. Leia paid $5.20 for two salad rolls and a juice. What is the price of a juice?
   1. $1.20
4. Jayden’s mother is 4 times his age, and his father is five times his age. If Jayden’ mother is 36 years old, how old is his father?
   1. 45
5. The numbers 2,3,4,5,6 and 7 are written on the face of a cube. If Craig rolls the cube what is the chance that the number on its top face is even?
   1. ½
6. A bread shop bakes 50 loaves of its wholemeal variety. On one day it sold 35 loaves. What percentage of the loaves were sold?
   1. 70%
7. The temperature at two o’clock in the afternoon was 10 degrees. Over the next 3 hours the temperature dropped by 12 degrees. What was the temperature at 5 o’clock?
   1. -2 degrees
8. Which is the better buy and by how much per carton? Five cartons of eggs for $21.05, or 7 cartons of eggs for $30.10
   1. 5 cartons
9. Bill bought one fifth of all the apples left on a shelf. If he bought 8 apples, how many were left on the shelf?
   1. 40 apples
10. You have to put ten shirts into a draw, some red some white and some black. How many black shirts do you have to put in the draw to make sure you have a better chance of pulling one out than any of the other colours?
    1. 5 black shirts
11. There are 10 boys and 10 girls in the year six maths class. On a test the boys’ average score was 70 and the girls’ average score was 80. What was the average score for the class?
    1. 75
12. Ben’s mother cut up a block of chocolate into equal sized pieces. She cut it so that Ben and his seven friends each got the same amount of chocolate, and there were 2 pieces left over. If each of the children got 4 pieces, how many pieces did she cut the chocolate bar into?
    1. 34 pieces
13. How long would it take an ant that walks at an average speed of 2cm per minute to walk around a square of side length 5cm?
    1. 10 minutes
14. The area of a square is 2500 cm2 . If the sides of the square are reduced to one fifth their size, what is the area of the new square?
    1. 100cm2
15. A movie projector blows the picture on a screen up to one hundred times its original size. What area would a triangle of base length 2 cm and height 5 cm have on the projector screen?
    1. 500cm2

Year 7

1. Julia was performing in a ballet and needed to buy a tutu, pointe shoes and white tights. If the tutu is $150, the shoes are $85, and the tights are $12. How much did she spend in total on her costume?
   1. $247
2. Of all the world’s rivers, the Amazon in South America and the Nile in Africa are the two longest. The Amazon is 6437 kilometres in length and the Nile is 233 kilometres longer than the Amazon. How long is the Nile River?
   1. 6670km
3. Hayden received a box of 36 chocolates. He ate 3 on Monday, 11 on Tuesday and gave 7 away on Wednesday. How many did he have left?
   1. 15
4. A beetle has fallen into a hole that is 15 metres deep. It is able to climb a distance of 3 metres during the day but at night the beetle is tired and must rest. However, during the night it slides back 1 metre. How many days will it take the beetle to reach the top of the hole to freedom?
   1. 7 days
5. Chris is buying some generators. The generators cost $12 000 each and she needs 11 of them. How much will they cost her?
   1. $132 000
6. Shea has booked a beach house for a week over the summer period for a group of 12 friends. The house costs $1344 for the week. If all 12 people stayed for 7 nights, how much will the house cost each person per night?
   1. $16/per night
7. At a confectionary factory, a machine dispenses 760 lollies into 8 jars. Assuming that an equal number of lollies is dispensed into each jar, find the number in each jar.
   1. 95
8. James and Liz discovered that they had different answers to the same question, which was to calculate 6 + 6 ÷ 3. James thought the answer was 8. Liz thought the answer was 4. Who was correct, James or Liz?
   1. James
9. In a class election with 3 candidates, the winner beat the other 2 candidates by 3 and 6 votes respectively. If 27 votes were cast, how many votes did the winner receive?
   1. 12 votes
10. Two smugglers, Bill Bogus and Sally Seadog have set up signal lights that flash continuously across the ocean. Bill’s light flashes every 5 seconds and Sally’s light flashes every 4 seconds. If they both start together, how long will it take for both lights to flash again at the same time?
    1. 20 seconds
11. Arrange the digits 0, 2, 4, 5, and 8 to form the smallest possible 5-digit number. You must use each digit once and only once.
    1. 20 458
12. In a race, one dirt bike rider completes each lap in 40 seconds while another completes it in 60 seconds. How long after the start of the race will the two bikes pass the starting point together?
    1. 120 seconds
13. A school bus left Laurel High School with 31 students aboard. Thirteen of these passengers alighted at Hardy Railway Station. The bus collected 24 more students at Hardy High School and a further 11 students disembarked at Laurel swimming pool. How many students were still on the bus?
    1. 31
14. At the milk processing plant, the engineer asked Farid how many cows he had to milk each day. Farid said he milked 192 cows because he obtained 1674 litres of milk each day and each cow produced 9 litres. Does Farid really milk 192 cows each day? If not, calculate how many cows he does milk.
    1. 186 cows
15. What is the smallest number of pebbles greater than 10 for which grouping them in heaps of 7 leaves 1 extra and grouping them in heaps of 5 leaves 3 extra?
    1. 43 pebbles

Year 8

1. My mother is 4 times as old as I am. My sister is 75% of my age and 10%of my grandfather’s age. My father is 50, which is 2 years older than my mother. How old is my sister and grandfather?
   1. Sister = 9, Grandfather = 90
2. Two friends are on holiday; one decides to go skydiving and the other decides to go scuba diving. If the skydiving plane climbs to 4405m above sea level, and the scuba diver goes to 26m below sea level what is the distance between the two friends?
   1. 4431 m
3. A rubber ball is dropped from a balcony which is 10m above the ground. The ball bounces to ¾ of its previous height after each bounce. Find the height of the ball after 3 bounces.
   1. 4.21875 m
4. At Teagan’s farm, there are 24 horses. One sixth of them are brown and one quarter of them are black. If half of the remaining horses are white and the other half are grey, how many grey horses are there?
   1. 7 grey horses
5. You have a plastic bag that contains 80 tennis balls. This bag of balls weighs 4kg. You add 10 more balls to your bag. How much does your bag of balls weigh now?
   1. 4.5kg
6. William owns a hairdressing salon and raises the price of haircuts from $26.50 to $29.95. By what percentage did he increase the price of haircuts?
   1. 13%
7. Stephanie bought some clothes from Target during their annual sale. She spent $79.00. She bought a skirt, a t-shirt and a pair of shorts. She paid $9 more for the t-shirt than for the shorts, and $7 more for the skirt than for the t-shirt. How much did the skirt cost her?
   1. $34
8. Convert 12 500 cm to km
   1. 0.125km
9. A give-way sign is in the shape of a triangle with a base of 0.5 m. if the sign is 58 cm high, find the amount (in m2) of aluminium needed to make 20 such signs. Assume no waste.
   1. 2.9m2
10. A narrow cylindrical vase is 33 cm tall and has the volume of 2592 cm2. Find the radius of the base of the vase.
    1. 5 cm
11. A square field is enclosed by a square fence, using 48 posts. The posts are 5m apart, with one at each corner of the field. Determine the area bounded by the fence.
    1. 3600m2
12. Shannon is saving to buy a new computer, which costs $3299. So far, he has $449 in the bank and he wants to make regular deposits each month until he reaches his target of $3299. If he wants to buy the computer in 8 months’ time, how much does he need to save as a monthly deposit?
    1. $356.25
13. Michael checked his bank balance before going shopping. He had $450. He bought two suits, which cost the same and three pairs of shoes, each of which cost half the price of a suit. He also had lunch for $12 . when he checked his balance again he was $33 overdraw. What did one suit cost?
    1. $134.57
14. There are three swimmers in a 100 m freestyle race. Swimmer A is twice as likely to win as B and three times as likely to win as C. Find the probability that B or C wins.
    1. 5/11
15. In a certain school band there are 6 girls and some boys. A student is selected at random from this group. Find the number of boys in the group if the possibility that a girl is selected is ¼.
    1. 18 boys

Year 9

1. Determine the closest distance between Mars and Saturn if Mars is 2.279 x 108 km from the sun and Saturn is 1.472 x 109 km from the sun.
   1. ~~9.16 x 10~~~~7~~ ~~km~~ 1.2441 x 109
2. The distance from the origin to the y-intercept of a linear graph is three times the distance from the origin to the x-intercept. The area of the triangle formed by the line and axes is 3.375 untis2. The line has a negative gradient and a negative y-intercept what is the equation of the line?
   1. y = -3x – 4.5
3. The gear ratio for front and back sprockets of a bicycle is 10:3. If the front (large) sprocket has 40 teeth, how many teeth does the back sprocket have?
   1. 12 teeth
4. There are 12 people trying out for a badminton team. Five of them are girls what is the probability that a team chosen at random to play is a mixed doubles team?
   1. 35/66
5. At a fun park, the cost of a Rollercoaster ride and a Ferris wheel ride is $10. The cost of a Gravitron ride and Ferris wheel ride is $12. The cost of a Rollercoaster ride and Gavitron ride is $14. What is the cost of each ride?
   1. Rollercoaster = $6, Ferris wheel = $4, Gavitron = $8
6. Laurie buys milk and bread for his family on the way home from school each day, paying with a $10 note. If he buys three cartons of milk and two loaves of bread, he receives 5 cents in change. If he buys two cartons of milk and one loaf of bread, he receives $4.15 in change. How much does each item cost?
   1. Milk = $1.75, bread = $2.35
7. A newly discovered super colony of bees contains 2.05 x 108 bees. If 0.4% of these were estimated to be queen bees, how many queen bees live in the super colony?
   1. 820 000 queen bees
8. If your body produces about 1.0 x 1010 white blood cells each day, how many white blood cells does your body produce each hour?
   1. 4.167 x 108
9. A paddock contains some cockatoos (2-legged) and kangaroos (4-legged). The total number of animals is 21 and they have 68 legs in total. Using simultaneous equations, determine how many cockatoos and kangaroos there are in the paddock.
   1. 13 kangaroos and 8 cockatoos
10. A witness described a getaway car having a Victorian number plate starting with TLK. The witness could not remember the three digits that follow but recalled that all three digits were different. How many cars in Victoria could have a registration plate with these letters and numbers?
    1. 720
11. Lisa drove to the city from her school. She covered a distance of 180 km in 2 hours. What is Lisa’s average speed?
    1. 90km/h
12. The royalties of a Physics text book are going to the teachers that wrote chapters. Miss Alan wrote 4 chapters, Mrs Cato wrote 7 chapters, Ms Dawn wrote 6 chapters and Mr Bradley wrote 3 chapters. The expected amount shared is $28,000, if the royalty is split in ratio to the number of chapters, how much will each teacher get?
    1. Miss Alan = $5600, Mr Bradley = $4200, Mrs Cato = $9800, Ms Dawn = $8400
13. Each floor of an office block has rectangular floors 32 m by 15 m. If the total office space is 3840 m2 , how many floors in the building?
    1. 8 floors
14. A car uses 7 litres of petrol to travel 100 km. How much petrol is needed to travel 325 km?
    1. 22.75L
15. 2 A 2.8 m ladder is to be laid against a wall so that the top of the ladder is 2 m up the wall. How far out from the base of the wall should the ladder be placed? Answer to nearest cm
    1. 1.96m

Year 10