

Problem-solving

Top Ten Mathematics
Division
Unit 8



Fruit Pickers

A group of fruit pickers picks about 100 pieces of fruit per hour, working for 8 hours a day. There are 5 fruit pickers in the team. Each hour, they also eat about 10 pieces of fruit each, and run away from roughly 8 redback spiders each day.

As they pick, all the fruit is tipped into baskets that can hold 120 pieces of fruit.

- a) How many baskets will be needed by the end of the work day?
- b) If the pickers are paid based on what the fruit earns, and each piece of fruit sells to the supermarket for 10 cents, and they receive half of that, how much per hour are the pickers paid?
- c) What if a minimum wage protection is brought in and the pickers are now paid 25 cents per piece of fruit?



Logs for the Fire

To prepare for the winter, a family chops wood. The family has 6 people. Each family member chops 5 trees, stacking logs in 10 piles that are 15 logs high along the side of the house.

- a) If it is winter in Australia (June, July, August) and the family uses 3 logs each day on the fire to keep warm, plus 1 for roasting marshmallows. How many days will their log pile last?
- b) To last the entire winter, how many logs do they need to stockpile?
- c) What if it is a particularly cold winter, so they need 6 logs each day?
- d) What if winter lasts for 5 months, because it is so cold for the month before and month after the official calendar winter?
- e) What if they run out because they only prepare as normal, so need to buy the rest of the logs from the firewood shop for the harsh winter in *Part C* and *Part D* combined. Each log is \$2.50. How much will they need to spend?
- f) How much should each family member pay towards the cost of the logs?



Summer Reading

Toby hates reading. Hates it!

He has to read three books over the summer for school. The first book has 87 pages. The second book has 38 pages. The third book has 92 pages. His favourite comic book has 45 pages and is not one of the three books he has to read – he just chooses to read it because he likes it.

If Toby wants to finish the three books he has to read as quickly, to get it over and done with, how many pages would he need to read to be finished for each of these timeframes:

- a) To finish all 3 books in two days (how many pages should he read each day)?
- b) To finish all 3 books in four days?
- c) One week?
- d) One week and one day?
- e) One fortnight?
- f) One month?
- g) One month and one week?
- h) One year (too late!)?



Birthday

For her birthday, Olivia got \$50 from her grandma, \$75 from her parents, \$20 from her sister, as well as \$45 from selling some old toys and \$300 from selling an old bike.

- a) For only the birthday present money, Olivia wants to split it into three 'Barefoot' jars (a 'save up' jar, a 'spend' jar and a 'give' jar). If she wants to split it fairly, how much should she put in each jar?
- b) What if she decides to split the money from the things she sold into the jars equally as well?
- c) What if she decides on a different percentage split? Detail 5 options for her to select from.

The Fortnite logo is centered within a large, stylized circular graphic. This graphic consists of several concentric, overlapping rings in shades of light blue and light green, creating a soft, glowing effect around the text.

Fortnite

In the game Fortnite, 1000 V-Bucks costs \$15 AUD (Australian dollars).

- a) If you want 4560 V-Bucks for a skin (outfit) for your character, how much will that cost in real money?
- b) If you earn \$20 pocket money per week, how long does it take to save up?
- c) If you and your mate plan to split the cost of a 9000 Skin, how long will it take to save up for your share of it?
- d) What if a premium skin you want is 17 000 V-Bucks and you split it between yourself and 3 other mates – how much will your share cost you in AUD?

Make your
own

Create three of your own worded problems
to swap with a partner.

Make these challenging:

- Include irrelevant or distracting information.
- 2 or 3-part question, or 2-3 steps within the single question.
- More than one operation.
- Challenging/ugly numbers.