

## Answers

- 8→ A. For example: I would multiply because each minute of water uses 35 L and the water was on for 15 min. I would estimate because 35 L each minute is an estimate.  $30 \times 15 = 450$  and  $40 \times 15 = 600$ , which I did mentally because one number in each multiplication is a ten, I estimate about 525 L because it is halfway between 450 and 600.
- 8→ B. For example: I would estimate because the problem uses a range of numbers so must be an estimate. I chose 115 L, which is just over 100 L. You can have almost 4 baths since I know  $4 \times 100 = 400$ . If I chose 190 L, which is just under 200 L, you can have about 2 and a half baths. So 3 to 4 baths is a good estimate.
- 8→ C. For example: I would use pencil and paper to estimate the number of litres in 1 hour.  $60 \times 35 = 2100$  or about 2000 L in 1 hour. Then I would use mental math to multiply 2000 by 4, which is about 8000 L.
- 8→ D. For example: I estimated that the lawn watering uses about 8000 in 4 hours. A person needs about 5 L of water each day so I used mental math to divide 8000 by 5. I regrouped 8000 as  $5000 + 3000$  and  $5000 \div 5 = 1000$  and  $3000 \div 5 = 600$ . There is about  $1000 + 600 = 1600$  days or about 5 years of drinking water lost.
- 8→ E. For example: how much water would you save in a year if you washed dishes by hand every day instead of using a dishwasher?  
For one day,  $40 - 35 = 5$  litres would be saved. In one year,  $5 \times 365 = 1825$  litres would be saved. I used pencil and paper to multiply because I can multiply a one-digit number by a three-digit number and the numbers are too difficult to do mentally.
1. a) For example: I multiply because the question asks for an amount over a greater period of time. I divide because the question asks about sharing an amount of something.
- b) For example: I estimate when the question doesn't need an exact answer. The rest of the time I calculate. I used estimation for these problems because the numbers are all estimates.
- c) For example: I use mental math because it is faster for some questions. I use a calculator when I can't figure a problem out in my head or on paper. I use paper and pencil because I can solve the problem, but it is too hard to do with mental math.