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Estimate

When you don't have enough information to solve a problem, sometimes you have to estimate. Taking the information you do have and then making some simple assumptions can help you reach an answer that should be close to the exact answer you want.



The Eureka Tower in Melbourne is 91 storeys tall. Estimate how many metres tall the building is likely to be at the 91st floor.

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Eliminating Choices

On a multiple-choice test, you'll often find that you have four similar answers to choose from. This is to keep you from guessing. However, some answers can be eliminated immediately if you look at them carefully.

Look at the multiple-choice problem below.

What is the height of the Sydney Harbour Bridge?

- a. 34 metres
- b. 134 metres
- c. 234 metres
- d. 2034 metres

Which two of these answers can be eliminated immediately, and why? What is the correct answer?



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Division Property of Equality



The *Division Property of Equality* states that when you divide both sides of an equation by the same number, the two sides still have the same value. This is true no matter how complicated the equation. Remember, if you see the equal sign, the numbers and symbols on the left side of the equal sign have the same value as those on the right side..

Solve each problem below.

1. $3x = 15$
2. $4y = -28$
3. $54 = 6z$
4. $2.5r = 22.5$
5. $60x = -60$
6. $549 = 9t$

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Multiplication Property of Equality



The *Multiplication Property of Equality* states that when you multiply both sides of an equation by the same number, the two sides still have the same value. Remember, if you see the equal sign, the numbers and symbols on the left side of the equal sign have the same value as those on the right side.

Solve each problem below.

1. $\frac{x}{5} = 40$
2. $\frac{x}{13} = 715$
3. $\frac{r}{35} = 2$
4. $\frac{p}{-9} = -252$
5. $8.4 = \frac{t}{16.6}$
6. $11 = \frac{m}{9}$

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Circle/Pie Graph

A deep-space telescope is collecting data on a planet many light-years from Earth. The new telescope can collect data no other telescope has ever been able to collect. It finds a planet that looks a lot like the Earth, but the atmosphere is very different. It has 20% oxygen, 40% helium, 20% nitrogen, 10% carbon dioxide and 10% water vapour. Make a circle/pie graph showing the makeup of the new planet's atmosphere.



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Map Time

As part of a fundraiser, a local park has covered a section of the lawn with 225 numbered squares in a 15×15 box. The top row is numbered 1-15, the second row down is numbered 16-30, and so on. The last row is labelled 211-225. You pay \$1 for a set of directions. If you can follow them perfectly, there is a prize under the last square you reach. The directions are below.

1. Start in box 140 and go up 3 squares.
2. Go right 9 squares.
3. Go up 4 squares.
4. Go right 1 square.
5. Go up 1 square.
6. Go left 4 squares.
7. Go down 13 squares.
8. Go left 3 squares.
9. Go up 11 squares.
10. Go left 7 squares.
11. Go down 7 squares.
12. Go right 4 squares, and collect your prize!

Draw a map showing where you should end up. Which square should you be standing on?



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Jelly Beans



You have just won the raffle at your school fete, and now you have two choices. You can take a large jar of jelly beans as your prize, or you can try and pick out one purple jelly bean from the whole jar with your eyes closed. If you choose a purple one, you will win \$50. There are 75 purple, 351 black, 416 red, 279 green, 188 yellow, 221 blue, 255 pink, 204 orange and 194 white jelly beans. What are the chances that you could pull out a purple jelly bean with your eyes closed?

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Adding with 0 to 9



Using the numbers 0 to 9, and using each number only once, write a simple addition problem that is correct. For example, $765 + 324 = 1089$ is one possible solution that uses all ten numbers once and is mathematically correct. To make it a little more difficult, find a problem that does not add up to 1089 (which you could get by moving around the numbers from the example above). Write your addition problem below.

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