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Think 1

Dan and four friends planned a 32-day hike to the summit of Mt Everest. After they bought enough food to last the five people 32 days, three other friends decided that they also wanted to go along on the adventure. How long will the food last now that eight people are taking the trip?



Problems like these make your head start spinning because the brain has trouble knowing how to solve this type of problem.

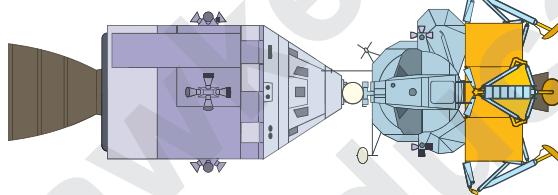
How nice of you to notice!
What can I do to make this problem easier to solve?



Level 1

1) It takes 5 workers 12 hours to unload one truck. How long would it take 6 workers to unload the truck?

2) After an explosion of an oxygen tank, three astronauts were forced to move into the lunar lander that was attached to their spacecraft.



If the lunar lander had enough oxygen to last 2 people for 6 days, is there enough oxygen for 3 astronauts if their journey back to earth will take 4 days? Why or why not?

3) If it takes 3 people 4 hours to clean a warehouse, how long will it take 4 people to clean the warehouse?

4) If it takes 7 people 3 hours to dig a 2 cubic metre hole, how long will it take two people to dig the hole?



5) It takes Deanna 7 hours to paint a fence. What fraction of the fence does she paint in one hour?

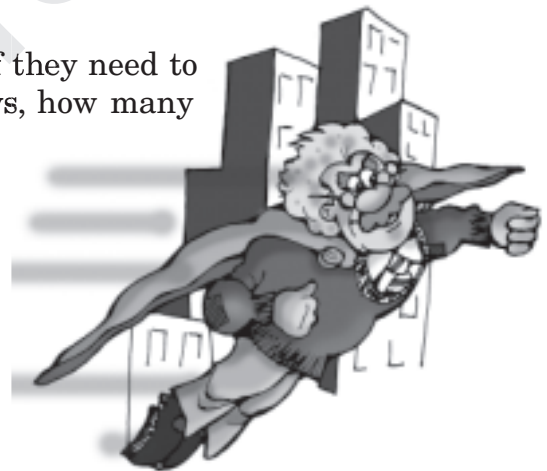
Einstein Level

- 1) When the drain is closed, a swimming pool can be filled in 4 hours. When the drain is opened, it takes 5 hours to empty the pool. The pool is being filled, but the drain was accidentally left open. How long until the pool is completely filled?
- 2) It takes 3 city snowploughs 14 hours to clear 500 kilometres of road. If the city wants the 500 kilometres of road to be cleared in 6 hours, how many additional snowploughs must they buy?
- 3) Brandon can rake his lawn in 8 minutes, while his brother can rake the lawn in 12 minutes. If they work together, how long will it take them to rake the lawn?
- 4) A construction crew must build a road in 10 months or they will be penalised \$500,000. It took 10 workers 6 months to build half of the road. How many additional workers must be added to finish the road in the remaining 4 months?
- 5) Anna paints a fence in 4 hours while her brother paints it in 5 hours. If they work together, how long will it take them to paint the fence?



Super Einstein

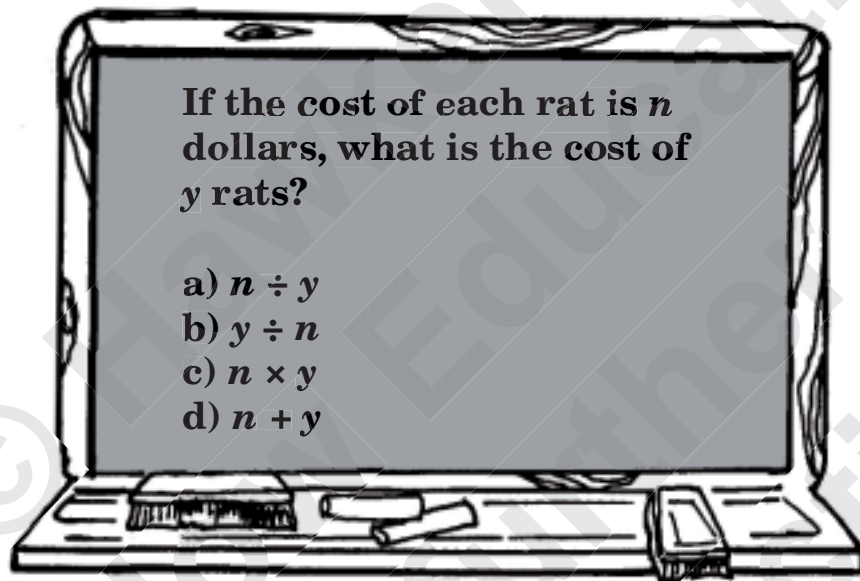
Eight workers dug $\frac{3}{8}$ of a tunnel in 10 days. If they need to finish the remaining $\frac{5}{8}$ of the tunnel in $3\frac{1}{5}$ days, how many more workers must they hire?



Chapter Two

The 2-10 Method

Luke was taking a maths test to apply for a university scholarship. Most of the questions were easy, but one was very confusing.



Luke had no idea how to do this problem until he remembered what Einstein told him a few months earlier.