

Multi-Step Word Problems

1. Sandra read 5 books, Deacon read 6 books and Breanna read 7 books. One book was read by all three children, but every other book was different. How many different books did the children read?
2. In Science class, Sara needed 8 test tubes for 3 different experiments. The first experiment required 2 test tubes and the other two experiments required the same number of test tubes. How many test tubes were needed for each of the other two experiments?
3. Branson and his sister Beatrice combined their allowance of \$7 each, so they could buy a movie for \$12. They bought \$1 containers of fruit salad with the remaining money and split the containers evenly between them. How many containers of fruit salad did they each get?
4. Before Cam broke his right arm, he was able to type 9 words per minute on his phone. After he broke his arm, he had to use his left hand for a while, and he could only type 6 words per minute. What is the difference between the number of words he could type in 5 minutes before and after he broke his arm.
5. When Gisselle decided to stop eating junk food, she started saving more of her allowance to buy a larger bicycle. She managed to put away \$6 every week for 8 weeks and found a nice used bicycle for \$50. She thought that she had close to that amount in her savings jar. Did she have exactly enough for the bicycle? If not, how much extra or how much too little did she have?
6. Annie and Dustin took a beginner's programming course over several weekends that showed them how to make simple video games. They spent most of their waking hours engaged in programming tasks and ended up with a game they called "Ro-Bot-Ro-Call." How many hours do you think they spent on their course? Show your work.

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7. Kelley belonged to a canoe club that had 18 canoes. They kept their canoes on trailers, each able to carry canoes 2 wide and 3 high. If they had enough trailers for all of their canoes, how many trailers did they have?
8. Lilah's band had practiced 24 songs. At a performance, they played 7 songs in their first set and 8 songs in their second set. How many songs did they have for their third set, if they had to save one song for an encore?
9. While Gideon was camping with his family for a week, it rained for 3 days. When he looked at the weather records, he saw that the amount of rain was 3 mm, 6 mm, and 5 mm on the three days. During the same week, it rained 26 mm at his house. How much less rain did he experience while camping?
10. Heath and Jaydon liked birdwatching and kept track of how many different species they saw at each site. In one day, they visited 5 different sites and saw an average of 7 species at each site. The day before, they saw 30 different species at 6 different sites. How many fewer species did they see at each site the day before?
11. Harmony used discarded paper to make notepads for her friends. She would fold five letter size pieces of paper three times then cut along the lines. She would then stack the smaller note papers and staple them together. How long would one notepad last if someone wrote ten notes per day?
12. Gregory's nine chickens laid an average of six eggs each per week. Gregory sold those eggs for \$3 per dozen. How much money did he collect in two weeks if he sold all his eggs?

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Answers

1. Sandra read 5 books, Deacon read 6 books and Breanna read 7 books. One book was read by all three children, but every other book was different. How many different books did the children read?

1 common book + 4 more read by Sandra ($5 - 1$) + 5 more read by Deacon ($6 - 1$) + 6 more read by Breanna ($7 - 1$) = 16 different books

2. In Science class, Sara needed 8 test tubes for 3 different experiments. The first experiment required 2 test tubes and the other two experiments required the same number of test tubes. How many test tubes were needed for each of the other two experiments?

8 test tubes - 2 test tubes = 6 test tubes; 6 test tubes divided by 2 = 3 test tubes for each of the other experiments

3. Branson and his sister Beatrice combined their allowance of \$7 each, so they could buy a movie for \$12. They bought \$1 containers of fruit salad with the remaining money and split the containers evenly between them. How many containers of fruit salad did they each get?

\$7 + \$7 = \$14 combined allowance; \$14 - \$12 = \$2 remaining money; \$2 divided by \$1 per container = 2 containers of fruit salad; 2 containers divided by 2 people = 1 container each

4. Before Cam broke his right arm, he was able to type 9 words per minute on his phone. After he broke his arm, he had to use his left hand for a while, and he could only type 6 words per minute. What is the difference between the number of words he could type in 5 minutes before and after he broke his arm.

9 words per minute x 5 minutes = 45 words; 6 words per minute x 5 minutes = 30 words; 45 words - 30 words = 15 words difference

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5. When Gisselle decided to stop eating junk food, she started saving more of her allowance to buy a larger bicycle. She managed to put away \$6 every week for 8 weeks and found a nice used bicycle for \$50. She thought that she had close to that amount in her savings jar. Did she have exactly enough for the bicycle? If not, how much extra or how much too little did she have?

\$6 per week x 8 weeks = \$48. \$50 - \$48 = \$2, so she had \$2 too little for the bicycle.

6. Annie and Dustin took a beginner's programming course over several weekends that showed them how to make simple video games. They spent most of their waking hours engaged in programming tasks and ended up with a game they called "Ro-Bot-Ro-Call." How many hours do you think they spent on their game? Show your work.

This is a numberless word problem which requires students to come up with a reasonable answer for the question. Things they might consider include: (1) How many weekends are suggested by the word "several?"; (2) Did they spend the morning, afternoon and evening on both Saturday and Sunday? (one clue is that they spent all their waking hours); (3) Did they work through meals?; (4) Do you count the hours for each or combined hours?

For example students might say that several is probably around 3 weekends times about 8 hours a day (since that is a typical work day) times two people, so 3×2 (days per weekend) $\times 8 \times 2 = 96$ hours. Answers may vary.

7. Kelley belonged to a canoe club that had 18 canoes. They kept their canoes on trailers, each able to carry canoes 2 wide and 3 high. If they had enough trailers for all of their canoes, how many trailers did they have?

$2 \times 3 = 6$ canoes per trailer. 18 canoes divided by 6 canoes per trailer = 3 trailers

8. Lilah's band had practiced 24 songs. At a performance, they played 7 songs in their first set and 8 songs in their second set. How many songs did they have for their third set, if they had to save one song for an encore?

7 songs + 8 songs + 1 encore = 16 songs. 24 songs - 16 songs = 8 songs left for their third set.

9. While Gideon was camping with his family for a week, it rained for 3 days. When he

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looked at the weather records, he saw that the amount of rain was 3 mm, 6 mm, and 5 mm on the three days. During the same week, it rained 26 mm at his house. How much less rain did he experience while camping?

3 mm + 6 mm + 5 mm = 14 mm of rain in 3 days. $26 \text{ mm} - 14 \text{ mm} = 12 \text{ mm}$ less rain at the camp site.

10. Heath and Jaydon liked birdwatching and kept track of how many different species they saw at each site. In one day, they visited 5 different sites and saw an average of 7 species at each site. The day before, they saw 30 different species at 6 different sites. How many fewer species did they see at each site the day before?

30 species divided by 6 sites = 5 species per site. $7 - 5 = 2$ fewer species at each site the day before.

11. Harmony used discarded paper to make notepads for her friends. She would fold five letter size pieces of paper three times then cut along the lines. She would then stack the smaller note papers and staple them together. How long would one notepad last if someone wrote ten notes per day?

Folding three times makes 8 sections or note size pieces of paper per letter size paper. $8 \text{ sections} \times 5 \text{ papers} = 40 \text{ note size papers}$. $40 \text{ note papers} \div 10 \text{ notes per day} = 4 \text{ days}$.

12. Gregory's nine chickens laid an average of six eggs each per week. Gregory sold those eggs for \$3 per dozen. How much money did he collect in two weeks if he sold all his eggs?

$9 \text{ chickens} \times 6 \text{ eggs per chicken per week} \times 2 \text{ weeks} = 108 \text{ eggs in two weeks}$. $108 \text{ eggs} \div 12 \text{ eggs per dozen} = 9 \text{ dozen}$.
 $9 \text{ dozen eggs} \times \$3 \text{ per dozen} = \$27$ in two weeks.