

Student Guide

Workshop: Multiplication with Larger Numbers

Questions 1–28 (SG pp. 291–295)

- \$678; Possible response using mental math:
 $3 \times \$225 = \675 and add $\$3 = \678 .
- Luis and his sister can each go to camp for 1 week. Half of \$500 is \$250 and \$250 is more than \$226.
- No. Possible response. They now have a total of \$750 because $\$500 + 2 \times \$125 = \$750$. They need $4 \times \$226$ for both children to go to camp for 2 weeks which would cost \$904. That is more than the \$750 they have.
- \$625; Multiplication methods will vary. Using mental math:
 $5 \times \$100 = \500 and $5 \times \$25 = \125 .
 $\$500 + \$125 = \$625$.

- 480 families;
 $120 \text{ campsites} \times 4 \text{ campgrounds} = 480 \text{ campsites (one family per campsite)}$
- $960 \text{ tents; } 480 \text{ campsites} \times 2 \text{ tents} = 960 \text{ tents}$
- Yes, the supplies total about \$50;
 $20 + 4 + 25 + 4$ is a little more than \$50. So \$60 is enough money to pay for the supplies; an estimate is a good choice because an exact answer is not needed.
- \$70 for firewood; $\$25 \times 2 \text{ bundles} = \50 ,
 $\$10 \times 2 = \20 , $\$50 + \$20 = \$70$
- 5040; $254 \times \$10 = \2540 , $100 \times \$25 = \2500 . So, $\$2540 + \$2500 = \$5040$

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Discuss

Going to Camp
 ✓ **Self-Check: Questions 1-4**

Show your thinking for each problem you solve. On your paper, circle the problems for which you chose estimation as the most efficient strategy.

- Luis is going to outdoor education camp this summer. The camp is \$226 each week. Luis really wants to go for three weeks. How much is that going to cost?
- Luis's sister wants to go to camp, too. Their family has \$500 for camp this summer. Can Luis and his sister go to camp? For how many weeks?
- Grandpa Joe gives Luis and his sister each \$125 to add to the family's money. Do the two children have enough money now to go to camp for two weeks?
- Grandpa Joe gives each of his five grandchildren \$125 to go to camp. How much money does he give to his grandchildren altogether?

Use the Self-Check Questions and the menu to check your progress and choose practice.

Can I Do This?	Working On It! I could use some extra help.	Got It! I'm ready for a challenge.
Choose good strategies.	● Q# 5-11, 22	■ Q# 12-22

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Setting Up Camp

Show your thinking for each problem you solve. On your paper, circle the problems for which you chose estimation as the most efficient strategy.

A campground is a big area where many people can pitch their tents. A campground is divided into campsites. Each family that camps at the park gets a campsite.

- There are four campgrounds in the park. Each campground has 120 campsites. How many families can stay at the park at one time?
- Ana's family pitches two tents on their campsite. If two tents were pitched at every campsite in the state park, how many tents would there be in the park?
- Ana's family needed some additional supplies for their camping trip. A list of the items and prices are listed below.

Need	Item	Cost
1	Bug Spray	\$3.25 each
1	Lantern	\$25.00 each
2	Bag of ice	\$2.00 each
5	Rain ponchos	\$9.50 each

Ana's mother has \$60. Does she have enough money to buy the supplies? Explain your thinking.

- The state park sells firewood for \$25 for a large bundle and \$10 for a small bundle. Ana's family purchases two large bundles and two small bundles during their stay. How much money did they spend on firewood?
- The state park sold 254 small bundles of firewood and 100 large bundles during one weekend. How much money did the state park collect by selling firewood?

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- 10. Ana's older brother, Felipe, is hanging a clothesline to dry towels. He wants to hang three lines at different heights between two trees. He measures the distance between the trees to be about 17 feet and plans to tie the ropes to the trees. How much rope would you tell Felipe to get to put up the three clotheslines? Explain your answer.
- 11. Ana's parents ask the children to help put up the tent. Ana looked at her watch when they began. It was 2:06. They finish setting up the tent at 2:52. How long did it take them to set up the tent?

Camping Adventures

Show your thinking for each problem you solve. On your paper, circle the problems for which you chose estimation as the most efficient strategy.

Ana, who is 10 years old, is camping with her 12-year-old brother Felipe, her 5-year-old sister Dalia, and her parents.

- 12. One evening, Ana and her family eat dinner at a restaurant in a nearby town. The restaurant had an "all-you-can-eat" fish dinner. The cost is \$7.00 for adults, \$5.00 for children ages 6–11, and \$2.50 for children ages 3–5. If the whole family orders the fish dinner, how much will the total bill be?

Ana's 11-year-old cousin Roberto, his mother, and his little sister Angela come to the park on Friday. The families decide to go canoeing together. It costs \$8.00 to rent a canoe for 1 hour. Each canoe holds 3 people.

- 13. Every person who is in a boat needs a life jacket. How many adult life jackets do they need? (Adults are ages 12 and up.) How many children's life jackets do they need?
- 14. How many canoes will they need to rent? There must be at least one adult in every canoe. (Adults are ages 12 and up.) They don't want to spend more money on rental than they have to. Draw a picture of how Ana's and Roberto's families can seat themselves in the canoes.



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- 10. At least 60 feet of rope. Round 17 up to 20; $20 \times 3 = 60$. It's a good idea to round up, because you need enough rope to go around the trees and be tied in knots. Depending on the size of the trees, you may need more rope.
- 11. 46 minutes; $2:52 - 2:06 = 46$ minutes
- 12. \$28.50; $\$7 + \$7 + \$7 + \$5 + \$2.50 = \28.50
- 13. 4 adult life jackets and 4 children's life jackets.
- 14. 3 canoes; pictures may vary. One will have 1 adult and 2 children, a second canoe will have 2 adults (including Felipe) and 1 child, and the third canoe will have 1 adult and 1 child.

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- 15. How much will they have to pay to canoe for 1 hour?
- 16. How much will they have to pay to canoe for 2 hours?
- 17. A. After canoeing, Ana's and Roberto's families decide to stop for frozen yogurt at the snack shop. A single-clip cone is 69¢. The price includes tax. Estimate how much money is needed to buy a cone for every person in both families.
B. Ana gives the cashier \$10.00 to pay for all the cones. About how much change will she get back?
- 18. The families decide to go on a long hike Saturday morning. Ana's father brought ingredients to make gorp. Gorp is a high-energy snack that is easy to take on a hike. Here is his recipe for 4 servings of gorp:

GORP

1	cup	raisins	
1	cup	peanuts	
1	cup	dried apples	
1	cup	dates	
1	cup	almonds	
1	cup	dried apricots	

Ana's father wants to make a serving of gorp for everybody who is hiking. How many servings of gorp does he need to make?

- 19. How many cups of peanuts should he use?
- 20. How many cups of dried apricots should he use?
- 21. Driving home from their vacation, Roberto's mother says they will travel about 50 miles in 1 hour. It takes them about 6 hours to get home. About how far is the park from their home?
- 22. Make up a story for each of the multiplication problems below and solve the problems. Your story can be about camping or anything else.

$\begin{array}{r} 12 \\ \times 8 \\ \hline \end{array}$	$\begin{array}{r} 8 \\ \times 6 \\ \hline \end{array}$	$\begin{array}{r} 1.75 \\ \times 8 \\ \hline \end{array}$
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- 15. \$24; $\$8 \times 3 = \24
- 16. \$48; $\$8 \times 3 \times 2 = \48
- 17. A. Estimates will vary. One possible solution: About \$5.60; $8 \times 70¢ = \$5.60$: an estimate is a good choice because a quick answer is needed.
B. Estimates will vary. One possible solution: \$4.40; $\$10 - \$5.60 = \$4.40$: an estimate is a good choice because an exact answer is not needed.
- 18. 8 servings because there are 8 people between the two families.
- 19. 2 cups of peanuts
- 20. 1 cup of dried apricots
- 21. About 300 miles; $50 \text{ miles} \times 6 \text{ hours} = 300$ miles; estimate is a good choice because an exact answer is not needed.
- 22. Stories will vary. 96; 48; \$14.

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23. \$80 to camp for 5 nights;
 $\$16 \times 5 \text{ nights} = \80
24. \$60 to camp for 5 nights;
 $\$12 \times 5 \text{ nights} = \60
25. \$20 more; $\$80 - \$60 = \$20$
26. No, he does not have enough money,
 $\$16 \times 3 = \48 , $\$80 + \48 is more than \$100;
 an estimate is good choice, because we do not
 need an exact answer.
27. \$315; $\$105 \times 3 \text{ nights} = \315
28. \$384; $9 \times \$16 = \144 , $20 \times \$12 = \240 ,
 $\$240 + \$144 = \$384$

Camping Fees

Show your thinking for each problem you solve. On your paper, circle the problems for which you chose estimation as the most efficient strategy.

✓ **Check-In: Questions 23-28**

Ana and her family are going camping at the Potawatomi (pod-a-wad-to-mi) State Park in Wisconsin. The fee to camp in the park is \$12.00 a night for families who live in Wisconsin and \$16.00 a night for people who do not live in Wisconsin.

23. Ana's family is arriving on Tuesday and staying until Sunday afternoon. Ana's family lives in Illinois. How much does Ana's family have to pay?

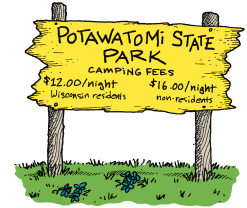
24. Nadia, a fourth grader from Milwaukee, Wisconsin, is also camping from Tuesday until Sunday. How much does Nadia's family pay to stay at the park?

25. How much more does Ana's family pay than Nadia's? Explain how you decided.

26. Ana's family decides to stay at the park another 3 nights. Ana's father brought \$100 to pay the camping fees. Does he have enough money for all the nights?

27. The Smith family decides to have their family reunion at Potawatomi State Park. The large group campsites are \$105 per night. The family reunion starts Thursday afternoon and ends Sunday afternoon. How much does the Smith family have to pay?

28. One night in August, there are 9 out-of-state families and 20 Wisconsin families camping at the state park. How much money did the park collect in camping fees that night?



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