

Before solving the problems in Questions 1–27, write the strategy you will use for each problem on the *Planning Your Strategies* page in the *Student Activity Book*. Use the strategy you chose to solve each problem. If you used a mental math or paper-and-pencil method, estimate to see if your answer is reasonable.

**Victory Videos**

- The Victory Videos store sells *Math and the Music Factory* videos for \$18 each. Mrs. Dewey bought a dozen of these videos for the school library. How much did the videos cost in all?
- A newly released movie is available for sale. Last weekend alone, Victory Videos sold 98 copies of this movie. If one copy costs \$24, how much money did Victory Videos receive for this movie?
- Victory Videos has 6 different sections. Each section has 12 shelves. Each shelf can fit about 95 movies. If the shelves are about half full, how many more videos will it take to fill the shelves?
- On Monday night, only 17 movies were rented. On Saturday night, 16 times as many movies were rented. How many movies were rented on Saturday night?
- There are 51 Victory Videos stores throughout the city. Each store has between 25 and 30 employees. How many people work for Victory Videos?
- Tanya rented 3 new movies. How much did she pay?
- Roberto rented two games and four old movies. How much did he pay?



Victory Video Prices (All prices include tax.)	
New Movies	\$ 4.69
Old Movies	\$ 3.99
Games	\$ 7.99

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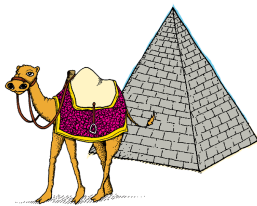
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**Question 1–30 (SG pp. 522–526)**

- \$216
- \$2352
- \* Answers may vary. Estimate about 3500 movies.
- 272 movies
- \* Answers may vary. Estimate between 1275 and 1530 people
- \$14.07
- \$31.94
- 1050 camels
- 5250 bundles of dates
- \* Estimate about 6000 gallons
- Estimate between 350 and 420 miles
- 850 miles
- 1665
- 4240
- 6510
- 3634
- 1936
- 1535

**Visiting Ancient Egypt**

- King Omar has 25 camel stables. Each stable has 42 camels. How many camels does King Omar have?



- Each camel can carry five bundles of dates. How many bundles of dates can they carry altogether?
- A thirsty camel can drink up to 30 gallons of water in less than 15 minutes. How many gallons of water could 200 camels drink in 15 minutes if they were all very thirsty?
- The baggage camels can travel between 25 and 30 miles in one day. King Omar took a trip to the ocean and used his baggage camels. It took him 14 days to reach the ocean. How many miles did King Omar travel with his camels?
- A riding camel can travel 85 miles in one day. On another trip, King Omar rode south along the Nile River on one of his riding camels. He traveled south for 5 full days. Then he returned home. How many miles did King Omar travel on this trip?
- $37 \times 45 =$
- $80 \times 53 =$
- $93 \times 70 =$
- $79 \times 46 =$
- $44 \times 44 =$
- $307 \times 5 =$

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\*Answers and/or discussion are included in the lesson.

- 19. 150 chairs
- 20. 168 chairs
- 21. No, Mr. Z has not set up enough chairs.  
Possible response: 20 rows of 20 chairs is 400 chairs. 18 rows of 16 chairs must be less than 400 chairs.
- 22.\* Estimation strategies will vary.  $30 \times 25 = 750$  chairs is a reasonable estimate.
- 23. \$18.75
- 24. \$38
- 25. No. Possible response: Estimate that if one ruler costs less than \$1, 30 rulers cost less than \$30.
- 26. No. Possible response: Estimate that \$15 would be exactly enough if folders cost 10¢, but folders cost 12¢.
- 27. Estimate between \$28 and \$32

28. A. 
$$\begin{array}{r} 1 \\ + 4 \\ \hline 5 \end{array} \left\langle \begin{array}{l} 1 \times 25 = 25 \\ 2 \times 25 = 50 \\ 4 \times 25 = 100 \end{array} \right\rangle + \frac{100}{25} = \boxed{125}$$

B. 
$$\begin{array}{l} 1 \times 25 = 25 \\ 2 \times 25 = 50 \\ 4 \times 25 = 100 \\ 8 \times 25 = \boxed{200} \end{array}$$

C. 
$$\begin{array}{r} 1 \\ 2 \\ + 8 \\ \hline 11 \end{array} \left\langle \begin{array}{l} 1 \times 25 = 25 \\ 2 \times 25 = 50 \\ 4 \times 25 = 100 \\ 8 \times 25 = 200 \end{array} \right\rangle + \frac{200}{25} = \boxed{275}$$

D. 
$$\begin{array}{r} 1 \\ 2 \\ 4 \\ + 8 \\ \hline 15 \end{array} \left\langle \begin{array}{l} 1 \times 25 = 25 \\ 2 \times 25 = 50 \\ 4 \times 25 = 100 \\ 8 \times 25 = 200 \end{array} \right\rangle + \frac{200}{25} = \boxed{375}$$

E. 
$$\begin{array}{r} 2 \\ 4 \\ + 16 \\ \hline 22 \end{array} \left\langle \begin{array}{l} 1 \times 25 = 25 \\ 2 \times 25 = 50 \\ 4 \times 25 = 100 \\ 8 \times 25 = 200 \\ 16 \times 25 = 400 \end{array} \right\rangle + \frac{400}{25} = \boxed{550}$$

29. 
$$\begin{array}{r} 2 \\ 4 \\ + 8 \\ \hline 14 \end{array} \left\langle \begin{array}{l} 1 \times 42 = 42 \\ 2 \times 42 = 84 \\ 4 \times 42 = 168 \\ 8 \times 42 = 336 \end{array} \right\rangle + \frac{336}{42} = \boxed{588 \text{ spice boxes}}$$

**Counting Chairs**

- 19. Jessie is setting up chairs for the assembly. She has set up 15 rows of 10 chairs. How many chairs did Jessie set up?
- 20. Luis was at the other end of the room setting up chairs as well. He set up 12 rows of 14 chairs. How many chairs did Luis set up?
- 21. Mr. Z needs to set up chairs for a performance in the gym. He needs to set up 400 chairs. He has already set up 18 rows of 16 chairs. Has Mr. Z set up enough chairs? How do you know?
- 22. The high school auditorium has 32 rows of 24 chairs. John estimated that there were 600 seats in the auditorium. How would you help John find an even better estimate?

$$\begin{array}{r} 32 \text{ --- } 30 \\ \times 24 \text{ --- } \times 20 \\ \hline 600 \end{array}$$



**Ordering School Supplies**

✓ Check-In: Questions 23-27

Cost of Items for School Store

Item	Cost
Pack of Pencils	75c
Protractor	85c
Compass	67c
Ruler	95c
Folder	12c

- 23. Ana is helping to order items for the school store. She needs to order 25 packs of pencils. How much will the pencils cost?
- 24. Twenty-two students need protractors and compasses. Ana decides to order 25 of each to have a few extra. How much will the protractors and compasses cost?
- 25. Thirty students need rulers. The supply company is offering a discount on rulers if the order is over \$30. If Ana orders 30 rulers, will she get the discount? Explain your reasoning.

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- 26. Ana has \$15 left in her budget to spend. Students need 150 folders. Does Ana have enough money to order all the folders? Explain your reasoning.
- 27. Ana knows the price of poster paper is usually between 80c and 90c per sheet. About how much will 35 sheets of poster paper cost?

**Multiplying Using a Doubling Table**

In *Phil and Howard's Excellent Egyptian Adventure* story, Ka used a doubling table to solve the problem  $21 \times 14$ .

$$\begin{array}{r} 8 + 4 + 2 = 14 \\ \left\langle \begin{array}{l} 1 \times 21 = 21 \\ 2 \times 21 = 42 \\ 4 \times 21 = 84 \\ 8 \times 21 = 168 \end{array} \right\rangle 42 + 84 + 168 = 294 \end{array}$$

$$\begin{array}{ccccccc} \text{II} & + & \text{IIII} & + & \text{IIIIII} & + & \text{IIIIIIII} \\ \text{II} & + & \text{IIII} & + & \text{IIIIII} & + & \text{IIIIIIII} \\ \hline 42 & + & 84 & + & 168 & = & 294 \end{array}$$

- 28. Use Ka's strategy to solve the following problems. Find an estimate to check for reasonableness. Show your thinking. You do not need to use Egyptian numbers.
  - A.  $25 \times 5$  B.  $25 \times 8$
  - C.  $25 \times 11$  D.  $25 \times 15$
  - E.  $25 \times 22$
- 29. There are 14 boats that carry 42 spice boxes each. How many spice boxes are on the boats altogether?

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


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Write your answer to Question 30 using Egyptian symbols.

**Egyptian Numbers and Symbols**

Egyptian Symbol	Number	Name
	1	stroke
	10	yoke
	100	coil of rope
	1000	lotus blossom
	10,000	bent finger
	100,000	tadpole
	1,000,000	Egyptian god

30. There are 44 camels in the caravan. Each camel can carry 15 jugs of water. How many jugs of water can be carried by the caravan of camels? Write your answer in numbers and in Egyptian symbols.

Apply what you know about choosing multiplication strategies to the problem on the *Dancing in TIMSville* pages in the *Student Activity Book*.

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$$\begin{array}{r}
 8 \\
 4 \\
 2 \\
 + 1 \\
 \hline
 15
 \end{array}
 \begin{array}{l}
 1 \times 44 = 44 \\
 2 \times 44 = 88 \\
 4 \times 44 = 176 \\
 8 \times 44 = 352
 \end{array}
 \begin{array}{r}
 44 \\
 88 \\
 176 \\
 + 352 \\
 \hline
 660
 \end{array}$$

660 jugs of water



**Student Activity Book**

**Planning Your Strategies\* (SAB p. 497)**

Strategies will vary. Estimation is appropriate for Questions 3, 5, 10, 11, 21, 22, 26, and 27. Questions 10, 18, 19, 21, 25, and 26 lend themselves to being solved with mental math.

**Dancing in TIMSville\* (SB p. 498–502)**

Dance floors will vary. A possible design that meets all the criteria is one rectangle  $10 \times 10$  on the left of the stage and another rectangle  $30 \times 25$  across the top of the stage.

$10 \times 10 = 100$

$30 \times 25 = 750$

$100 + 750 = 850 \text{ sq. ft.}$

Name \_\_\_\_\_ Date \_\_\_\_\_

### Planning Your Strategies

For Questions 1–27 in the *Choosing Strategies to Multiply* pages in the *Student Guide*, decide which strategy from the list below you think is best for each problem. Write your strategies in the table below. Use each strategy in the list at least two times.

**Strategy List**

<b>Mental Math</b>	<b>Paper-and-Pencil Methods</b>
1. Using Simpler Numbers	5. Using Rectangles
2. Halving and Doubling	6. All Partial
<b>Estimation</b>	7. Expanded Form
3. Using Convenient Numbers	8. Compact
4. Finding a Range	9. Combination

Question	Strategy	Question	Strategy	Question	Strategy
1		10		19	
2		11		20	
3		12		21	
4		13		22	
5		14		23	
6		15		24	
7		16		25	
8		17		26	
9		18		27	

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Name \_\_\_\_\_ Date \_\_\_\_\_

### TIMSville Dance Floor Final Design

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Name \_\_\_\_\_ Date \_\_\_\_\_

### How We Designed the Dance Floor

In the space below, write a letter to the mayor that explains how your team designed the dance floor. Think about these questions as you write.

- What strategies did you try?
- Which strategies did not work well? Why not?
- Which strategies worked best? Why?
- How did your design change as you solved the problem?
- How did you check if your design followed the mayor's rules?

Dear Mayor of TIMSville:

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