Name _____

Mental Puzzles

Using mental math to add helps you find tens and hundreds.

1. Look at each number in the puzzle board. Find two numbers in the box whose sum equals that number. Use each number *only once*. Do not use paper and pencil or a calculator.

119	225	511	259	173	28
486	374	375	227	164	314
389	136	72	241	81	326

Puzzle Board		
100 ____ + ____	200 ____ + ____	300 ____ + ____
400 ____ + ____	500 ____ + ____	600 ____ + ____
700 ____ + ____	800 ____ + ____	900 ____ + ____

2. Explain what methods you used to help you solve the puzzle board.

_____

_____

_____

_____

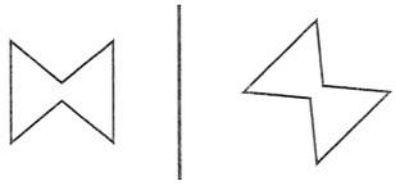
_____

Name_____

Matching Shapes

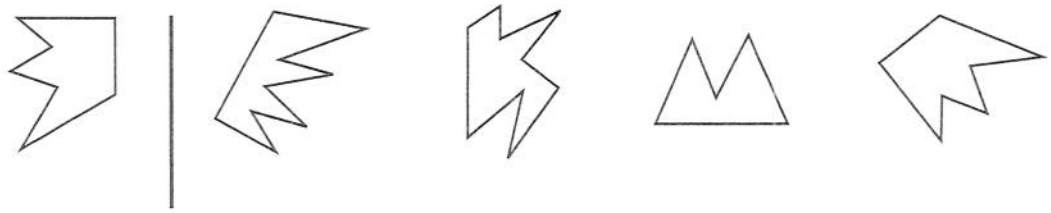
E 2-2
VISUAL THINKING

These two shapes are the same.
The second shape is turned.



Match each turned shape.

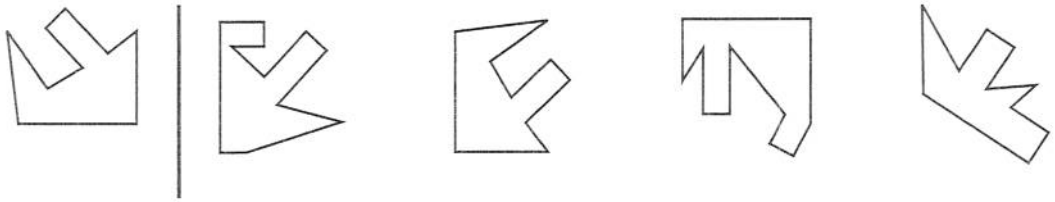
1.



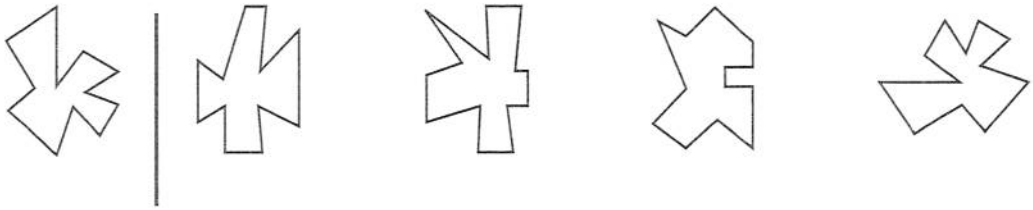
2.

3.

4.



5.



Name _____

Canyon Trip

E 2-3
DECISION MAKING

You are going on a three-day camping trip in the Grand Canyon. The chart shows the weights of some equipment you may need. Each person must take at least 2 water canteens and 3 food tins on the trip.

Equipment	Weight (lb)
Water canteen	1
Food tin	2
Compass	1
Shovel	5
Binoculars	3
Tent	8
Chair	10
Pillow	2
Extra clothes	7
Cooking pots/pans	30
Sleeping cushion	4

1. You are going to hike alone and carry a backpack. The backpack can hold up to 25 lb. What equipment will you take on the trip?

_____

_____

_____

_____

2. You are hiking with 2 friends. Each will carry 1 backpack. The 3 of you can carry up to 75 lb. You will only need 1 tent. What equipment will you take on the trip?

_____

_____

_____

3. You and 4 friends are taking donkeys on the trip. The donkeys can carry 180 lb. You will not take backpacks. You will need 2 tents. What equipment will you take on the trip?

_____

_____

_____

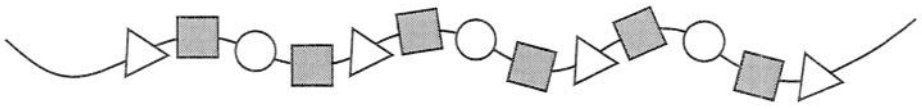
_____

Name _____

Charming Necklaces

E 2-4
DECISION MAKING

Jacklyn makes charm necklaces. She needs to make 10 necklaces like the one shown below.



Jacklyn has the following choices of charms to purchase to make her necklaces.

1. How many of each charm will Jacklyn need to make 10 necklaces?

_____

_____

2. How many packages of square charms will Jacklyn need to buy if she buys the 10-charm packages? _____

3. How much will Jacklyn pay if she buys all of the triangle charms she needs in 15-charm packages? _____

4. Explain one way Jacklyn could buy the number of each kind of charm she needs for the necklaces. How much will it cost?

_____

_____

_____

_____

_____

Name _____

Spaghetti Dinner

E 2-5
DECISION MAKING

A community center is holding a spaghetti dinner to raise $700 for a new playground. You are in charge of the budget. The expenses are shown below.

Expenses	
Item	**Amount**
Spaghetti	$ 80
Tomato sauce	$130
Juice	$ 75
Tablecloths	$ 68
Plates and utensils	$ 54
Napkins	$ 23
Garlic bread	$ 96
Renting the hall	$200

1. The center already has $150 saved for the playground. How much more does the center need?

   _____

2. What are the total expenses for the dinner?

   _____

3. How much money does the community center need to raise to pay the expenses and have enough money for the playground?

   _____

4. Sam was able to buy garlic bread from a bakery for $52. By how much did this lower the budget?

   _____

5. You expect 200 people to attend the dinner. Gloria says if people pay $6 each, the center will make enough money for the playground. Do you agree? If not, explain and suggest a different price per person.

Name _____

Use Your Head

E 2-6
REASONABLENESS

Look at the problem and the answer. Without actually adding the problem, decide whether or not the given answer is reasonable. Write *Yes* or *No* and explain your answer.

1.
$$\begin{array}{r} 224 \\ 303 \\ +\ 125 \\ \hline 652 \end{array}$$

_____

_____

_____

2.
$$\begin{array}{r} 300 \\ 478 \\ +\ 213 \\ \hline 991 \end{array}$$

_____

_____

_____

3.
$$\begin{array}{r} 24 \\ 56 \\ +\ 15 \\ \hline 83 \end{array}$$

_____

_____

_____

4.
$$\begin{array}{r} 18{,}207 \\ 4{,}956 \\ +\ 2{,}345 \\ \hline 101{,}217 \end{array}$$

_____

_____

_____

5.
$$\begin{array}{r} \$310.58 \\ 207.90 \\ +\ 189.03 \\ \hline \$707.51 \end{array}$$

_____

_____

_____

6.
$$\begin{array}{r} 2{,}341 \\ 4{,}750 \\ +\ 1{,}532 \\ \hline 80{,}623 \end{array}$$

_____

_____

_____

Name _____

Park Conclusions

E 2-7
REASONING

Each person made a conclusion about the data in the table. Think about each person's conclusion. Do you agree? Explain.

Protected National Parks

Country	Number of Parks	Total Size (km^2)
Canada	237	309,529
United States	59	202,320
Japan	15	12,991
Australia	339	275,551
New Zealand	11	21,011
Finland	17	3,541
France	5	2,613

1. Kylie compared the number of square kilometers of protected park land in the United States and Canada. She concluded that Canada has 97,209 km^2 more protected park land than the United States.

_____

_____

2. Franklin looked at the number of protected national parks in the United States and Australia. He concluded that Australia has 280 more protected parks than the United States.

_____

_____

3. Theona concluded that Canada has 130 more protected parks than the United States, Japan, New Zealand, Finland, and France altogether.

_____

_____

Name _____

So Many Decisions!

E 2-8
DECISION MAKING

The local sports store is holding an anniversary sale. As part of the sale, every 100th customer gets a chance to win prizes. Each selected shopper gets 15 min to fill a shopping cart with sporting goods and clothing. If the total price of the items is more than $280 but less than $300, the shopper keeps everything in the cart.

Here is a list of sporting goods and clothing. Place a check mark next to any item you would put in the cart. Then find your total.

Item	Price	Item	Price
___ Baseball	$ 4.99	___ Bicycle	$178.99
___ Football	$17.95	___ Tennis racket	$ 29.79
___ Basketball	$21.99	___ Tennis balls	$ 7.25
___ Hockey puck	$ 8.50	___ Sweatshirt	$ 16.99
___ Baseball glove	$34.99	___ Shoes	$ 41.50
___ Running shorts	$11.50	___ Weight set	$ 89.99
___ Cycling gloves	$16.00	___ In-line skates	$ 53.69
___ Stopwatch	$ 3.49	___ Gym ball	$ 1.99
___ Football helmet	$60.00	___ Baseball bat	$ 27.99
___ Golf clubs	$99.99	___ Golf balls	$ 14.50

1. What is your total price?

_____

2. Did you win your items?

_____

3. How did you decide which items to choose?

_____

_____

_____

_____

Name _____

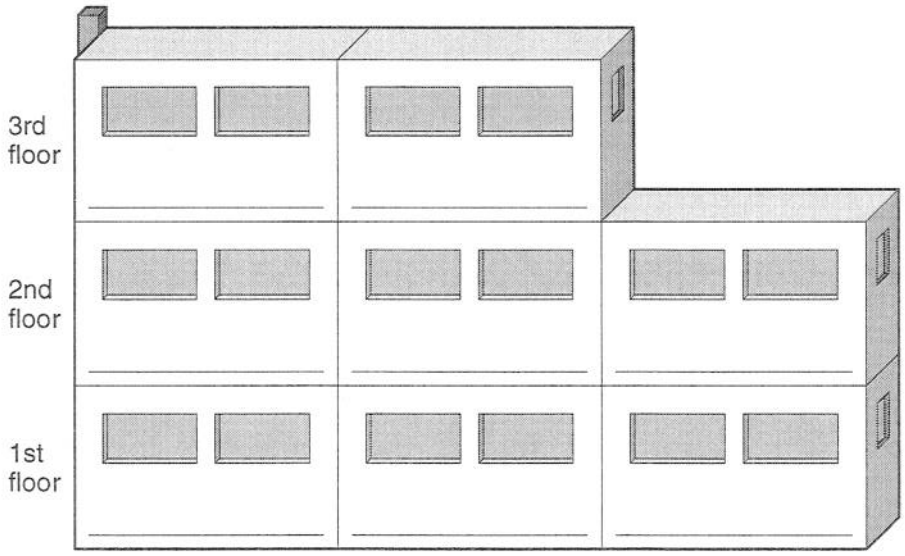
Where Do You Live?

E 2-9
REASONING

Read the clues to find where each person lives in the apartment building. As you discover where each person lives, write the person's name in the apartment.

1. At Rosebud Terrace, there are 8 apartments. The names of the tenants are Bill, Madeline, Warrick, Pamela, Quincy, Salma, Todd, and Kendra.

   - Salma lives on the second floor.
   - Quincy lives directly above Warrick.
   - Bill lives next to Pamela.
   - Madeline lives to the left of Warrick and to the right of Kendra.
   - Todd lives to the left of Quincy.
   - Pamela lives right above Todd.



2. Explain how you found each person's place in the apartment building.

_____

_____

_____

Name _____

Birdhouses

E 2-10
NUMBER SENSE

Cecilia owns a store that specializes in selling decorated birdhouses. The table at the right shows the number of birdhouses Cecilia sold each month. Write an expression to represent the following situations.

Birdhouses Sold

January	417
February	379
March	341
April	262
May	*m*
June	89
July	76
August	94
September	*s*
October	296
November	439
December	611

1. How many birdhouses did Cecilia sell in May and June together?

   _____

2. How many more birdhouses did Cecilia sell in October than in September?

   _____

3. What is the total number of birdhouses Cecilia sold from February through May?

   _____

4. If Cecilia sold 152 birdhouses in May, how many birdhouses did she sell in January and May combined?

   _____

5. If Cecilia sold 257 birdhouses in September, how many more birdhouses did she sell in September than in August?

   _____

6. The company that makes the birdhouses is now charging $4 more for each birdhouse. If Cecilia used to pay *b* for each birdhouse, how much will she need to pay now?

   _____

Name _____

Flying High

E 2-11
NUMBER SENSE

	Atlanta	Boston	Chicago	Dallas	Denver
Boston	946				
Chicago	606	867			
Dallas	721	1,555	796		
Denver	1,208	1,767	901	654	
Detroit	505	632	235	982	1,135

Use the air distance chart above to write a number sentence for each problem. Then solve.

1. How many more miles does it take to get from Denver to Atlanta than to get from Detroit to Atlanta and Chicago to Atlanta combined?

_____

2. Jorge flew from Dallas to Detroit, from Detroit to Denver, and from Denver back to Dallas. How many miles did Jorge fly altogether?

_____

3. Maria flew from her home city of Boston to Atlanta, back home to Boston, and then back to Atlanta. How many miles did she fly altogether?

_____

4. How many more miles is it to fly round-trip between Dallas and Boston than between Denver and Chicago?

_____

_____

Name _____

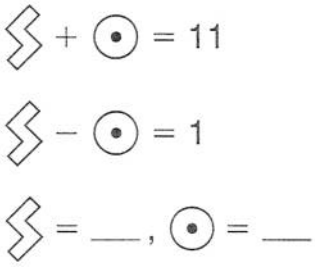
Break the Codes

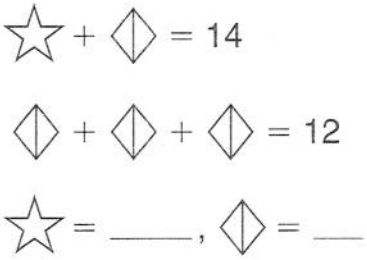
E 2-12
ALGEBRA

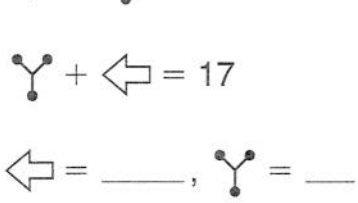
The symbols in each set of problems represent whole numbers. Break the codes.

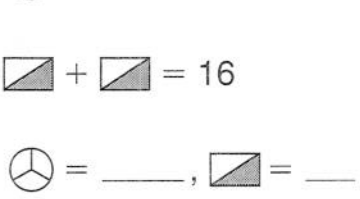
Hint: Here's how you might break one code.

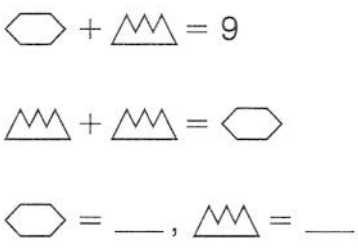
@ + ▲ = 27 @ + @ = 24	Think: @ + @ = 24 is a double. The two addends are the same, so @ = 12. Since 27 − 12 = 15, ▲ = 15.

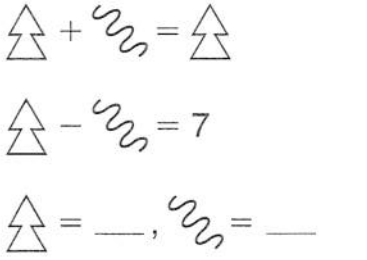
1. 

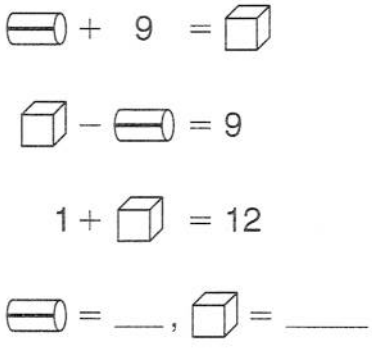
2. 

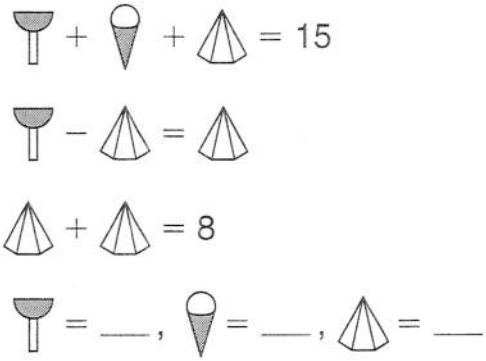
3. 

4. 

5. 

6. 

7. 

8. 

Name_____

Algebra Cadabra!

E 2-13
ALGEBRA

Find the value for x in the following exercises.

1. $x + 7 + x = 15$ _____

2. $6 + 8 - x = 11$ _____

3. $6 + x + 6 = 15$ _____

4. $23 - 7 - x = 9$ _____

5. $10 + 4 + x = 22$ _____

6. $25 - x - x = 15$ _____

7. $12 + 24 - x - x - x = 18$ _____

8. $x + 5 + x + 4 = 27$ _____

9. $x + x + x - 4 - 3 - 2 = 12$ _____

10. $14 + x - 11 - x + x - 3 = 1$ _____

11. $29 + 31 + 40 - x - x - x - x - x = 0$ _____

12. $x + x + x + 6 + x + 4 + x + 9 + x = 67$ _____

13. $9 - 1 + x + 4 + x + x - 5 + x + x + x = 61$ _____

14. $x - 5 + x - 8 + x + x + 3 + 12 + 10 + x + x = 72$ _____

15. $46 - 3 + x + x + x + x + x + x + x - 15 = 42$ _____

Name _____

Spread That Peanut Butter

E 2-14
NUMBER SENSE

The U.S. government requires all food products to show nutrition facts on the product label.

1. Four servings of peanut butter contain about 64 g of fat. Three servings contain about 48 g of fat. Use mental math to find the difference in fat between 3 and 4 servings of peanut butter. Explain your answer.

2. There are 200 calories in a serving of peanut butter. The number of calories from fat can be found by subtracting 60 from c, where c = the total number of calories. Find the number of calories from fat if $c = 200$.

3. In two servings of peanut butter there are 14 g of carbohydrates. In 3 servings there are 21 g and in 5 servings there are 35 g. Find the pattern for the number of carbohydrates in n servings of peanut butter.

Suppose that the price for a case of 24 jars of peanut butter is $57.36.

4. If the sale price for a case of peanut butter was $12.99 off the normal price, what would the sale price for 1 case be?

5. If you spent $72.53 on groceries, and $9.56 was spent on peanut butter, how much did you spend on other groceries?