

# 1ACE Exercise 30

## Investigation 1

### Bits and Pieces II

30. Julio is at the grocery store. He has \$10.00. Here is a list of the items he would like to buy. Use **mental computation** and **estimation** to answer questions (a)–(c).

Milk	\$2.47
Eggs	\$1.09
Cheese	\$1.95
Bread	\$0.68
Honey	\$1.19
Cereal	\$3.25
Avocado	\$0.50
Chipotles	\$1.29

Milk	\$2.50
Eggs	\$
Cheese	\$
Bread	\$
Honey	\$
Cereal	\$
Avocado	\$0.50
Chipotles	\$

a. Can Julio buy all the items with the money he has?

Explain.

**HINT** Remember he only has \$10.00 to spend.

b. If Julio had only \$5.00, what could he buy? Give two possibilities.

1.

2.

**HINT** Julio can spend as little or as close to \$5.00 as he wants.

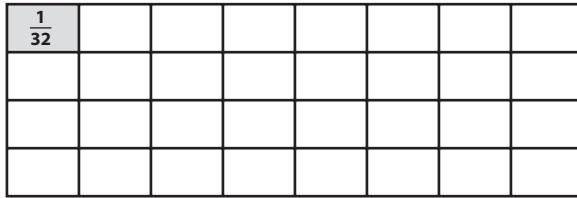
c. What different items can Julio buy to come **as close as possible to spending \$5.00**?

## 2ACE Exercises 5, 6, 14–17

### Investigation 2

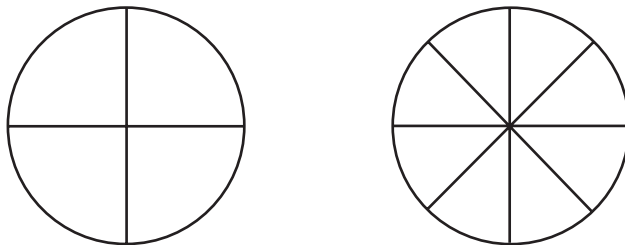
#### Bits and Pieces II

5. Rico and his friend eat part of a pan of lasagna (see below). Rico eats  $\frac{1}{16}$  of the lasagna, and his friend eats  $\frac{1}{32}$  of the lasagna. How much of the lasagna is left?



**HINT**  $\frac{1}{32}$  has been filled in, fill in  $\frac{1}{16}$ .

6. Suppose you eat  $\frac{3}{4}$  of a pizza and then eat  $\frac{1}{8}$  of another pizza of the same size.  
**How much of a whole pizza do you eat altogether?**



**HINT** Show (shade)  $\frac{3}{4}$  and  $\frac{1}{8}$  on the pizzas at the left.

**For Exercises 14–17, determine which sum is greater. Show your work.**

14.  $\frac{2}{3} + \frac{5}{6}$  or  $\frac{3}{4} + \frac{4}{5}$

Find common denominators.

$$\frac{2}{3} = \frac{4}{6}$$

$$\frac{3}{4} = \frac{15}{20} \text{ \& } \frac{4}{5} = \frac{16}{20}$$

Add.

$$\frac{4}{6} + \frac{5}{6} = \frac{9}{6}$$

$$\frac{15}{20} + \frac{16}{20} = \frac{31}{20}$$

Because you want to compare  $\frac{9}{6}$  and  $\frac{31}{20}$ , you will want to find a **common multiple** of these two numbers. Both 6 and 20 are factors of 60 ( $6 \times 10 = 60$  and  $20 \times 3 = 60$ ). 60 is the **smallest common multiple** of 6 and 20.

You want to rewrite the sums you are comparing ( $\frac{9}{6}$  and  $\frac{31}{20}$ ) using the common denominator of 60.

$$\frac{9}{6} = \frac{90}{60} \text{ (} 6 \times 10 = 60 \text{ and } 9 \times 10 = 90 \text{)}$$

$$\frac{31}{20} = \frac{93}{60} \text{ (} 20 \times 3 = 60 \text{ and } 31 \times 3 = 93 \text{)}$$

**2ACE Exercises 5, 6, 14–17** (continued)**Investigation 2****Bits and Pieces II**

When you write the sums in terms of their common denominator you have

$$\frac{90}{60} \text{ and } \frac{93}{60} .$$

Then compare  $\frac{90}{60}$  and  $\frac{93}{60}$ .  $\frac{93}{60}$  is larger.

So, the sum of  $\frac{3}{4} + \frac{4}{5}$  is larger.

15.  $\frac{7}{6} - \frac{2}{3}$       or       $\frac{3}{5} - \frac{5}{10}$

16.  $\frac{1}{4} + \frac{5}{6}$       or       $\frac{1}{5} + \frac{7}{8}$

17.  $\frac{1}{16} + \frac{1}{12}$       or       $\frac{5}{4} - \frac{4}{5}$

**3ACE Exercise 6****Investigation 3****Bits and Pieces II**

6. Mrs. Mace's class was planning a field trip and  $\frac{3}{5}$  of her students want to go to Chicago. Of those who want to go to Chicago,  $\frac{2}{3}$  say they want to go to Navy Pier. What fraction of the class wants to go to Navy Pier?

**HINT** If Mrs. Mace's class has 30 students, how many would want to go to Chicago?

$$30 \times \frac{3}{5} = 18.$$

If  $\frac{2}{3}$  of those 18 students wanted to go to Navy Pier in Chicago, how many would want to go to Navy Pier?

$$18 \times \frac{2}{3} = 12.$$

What fraction is 12 of Mrs. Mace's whole class?

**4ACE Exercise 1****Investigation 4****Bits and Pieces II**

1. The Easy Baking Company makes muffins. Some are small and some are huge. There are **20 cups of flour** in the packages of flour they buy. How many muffins can be made from a package of flour if each muffin takes the following amounts of flour?

a.  $\frac{1}{4}$  cup

**HINT** Here is a way one might solve this first problem:

If each muffin takes  $\frac{1}{4}$  cup of flour, then 4 muffins can be made from 1 cup of flour. If you can make 4 muffins from 1 cup of flour, then you can make 80 muffins from 20 cups of flour ( $20 \times 4 = 80$ ).

Another way to think of this problem, is how many  $\frac{1}{4}$  cups of flour are in 20 cups of flour? ( $20 \div \frac{1}{4} = 80$ ).

Now, you do the following:

b.  $\frac{2}{4}$  cup

c.  $\frac{3}{4}$  cup

d.  $\frac{1}{10}$  cup

e.  $\frac{2}{10}$  cup

f.  $\frac{7}{10}$  cup

**4ACE Exercise 1** *(continued)***Investigation 4****Bits and Pieces II**

g.  $\frac{1}{7}$  cup

h.  $\frac{2}{7}$  cup

i.  $\frac{6}{7}$  cup

- j. **Explain** in words how the answers for  $20 \div \frac{1}{7}$ ,  $20 \div \frac{2}{7}$ , and  $20 \div \frac{6}{7}$  are related. **Show** why this makes sense.

## Check-Up

### Bits and Pieces II

4. Mr. Gomez took some of his cross-country team out for pizza the night before a big race. He ordered three medium pizzas. They ate the following amounts:

Scott ate  $\frac{2}{3}$  of a pizza

Nate ate  $\frac{7}{12}$  of a pizza

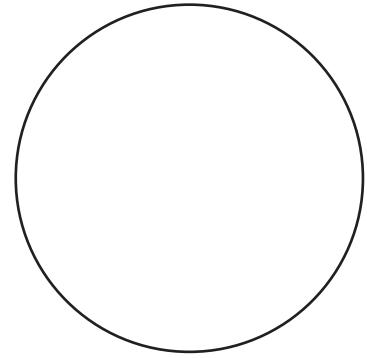
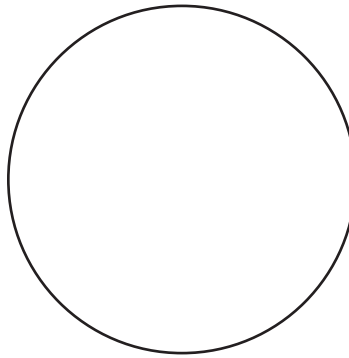
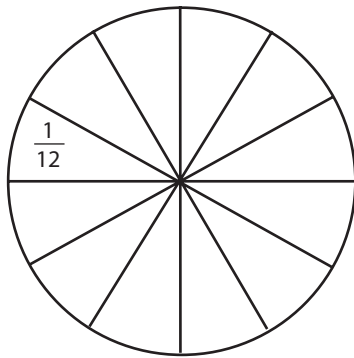
Da-Wei ate  $\frac{5}{12}$  of a pizza

Mr. Gomez ate  $\frac{5}{6}$  of a pizza

- a. How many pizzas did they eat?

Write a **number sentence** to support your answer and show how you could solve this problem using numbers.

**HINT** It might help to shade the amount of pizza each person ate on the 3 pizzas below. One has already been divided into 12 equal pieces.



- b. How many of the 3 pizzas were left?

Write a **number sentence** to support your answer and show how you could solve this problem using numbers.