Name: **School:** **Grade:** **Class:**

5-1 Rounding Fractions and Mixed Numbers - Practice and Problem Solving

Round each number to the nearest half.

11. $2\frac{4}{5}$

The numerator of $\frac{4}{5}$ is almost as large as the denominator. So, $2\frac{4}{5}$ rounds to 3.

13. $9\frac{1}{6}$

The numerator of $\frac{1}{6}$ is much smaller than the denominator. So, $9\frac{1}{6}$ rounds to 9.

15. $3\frac{1}{12}$

The numerator of $\frac{1}{12}$ is much smaller than the denominator. So, $3\frac{1}{12}$ rounds to 3.

17. $5\frac{3}{10}$

The numerator of $\frac{3}{10}$ is about half the denominator. So, $5\frac{3}{10}$ rounds to $5\frac{1}{2}$.

19. $3\frac{2}{3}$

The numerator of $\frac{2}{3}$ is about half the denominator. So, $3\frac{2}{3}$ rounds to $3\frac{1}{2}$.

Find the length of each item to the nearest half inch.

21.

(For an accurate measurement, see picture on page 252 of the text.)

2 in.

Name: School: Grade: Class:

23.

(For an accurate measurement, see picture on page 252 of the text.)

2 in.

25. **PACKAGES** Martin is mailing a gift that is $14\frac{3}{8}$ inches tall. He can choose from several shipping boxes. Should he round $14\frac{3}{8}$ inches up or down when selecting a shipping box? Explain your reasoning.

Martin should round up. By rounding $14\frac{3}{8}$ inches up to $14\frac{1}{2}$ inches, then his gift will fit in any box he selects that is at least $14\frac{1}{2}$ tall.

Round each number to the nearest half.

27. $6\frac{5}{16}$

The numerator of $\frac{5}{16}$ is about half the denominator. So, $6\frac{5}{16}$ rounds to $6\frac{1}{2}$.

29. $4\frac{19}{32}$

The numerator of $\frac{19}{32}$ is about half the denominator. So, $4\frac{19}{32}$ rounds to $4\frac{1}{2}$.

31. **CRAFTS** Marina is making birthday cards. She is using envelopes that are $6\frac{3}{4}$ inches by $4\frac{5}{8}$ inches. To the nearest half inch, how large can she make her cards?

The dimensions of her cards must be smaller than the dimensions of the envelope. The length of the envelope is $6\frac{3}{4}$ inches. Since $\frac{3}{4}$ is greater than $\frac{1}{2}$, The card's length can be $6\frac{1}{2}$ inches, to the nearest $\frac{1}{2}$ inch. The width of the envelope is $4\frac{5}{8}$ inches. Since $\frac{5}{8}$ is greater than $\frac{1}{2}$, the card's width can be $4\frac{1}{2}$ inches, to the nearest $\frac{1}{2}$ inch. Thus, the largest her cards can be is $6\frac{1}{2}$ inch by $4\frac{1}{2}$ inches.

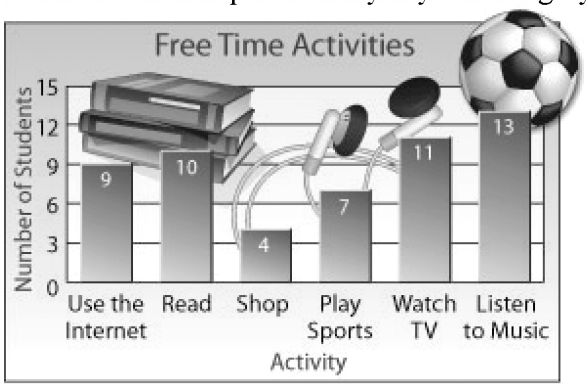
Use rounding to order each set of numbers from least to greatest.

Name: **School:** **Grade:** **Class:**

33. $3\frac{5}{9}, 3\frac{3}{14}, 3\frac{6}{7}$

The numerator of $\frac{5}{9}$ is about half the denominator. So, $3\frac{5}{9}$ rounds to $3\frac{1}{2}$. The numerator of $\frac{3}{14}$ is much smaller than the denominator. So, $3\frac{3}{14}$ rounds to 3. The numerator of $\frac{6}{7}$ is almost as large as the denominator. So, $3\frac{6}{7}$ rounds to 4. The order of the numbers, from least to greatest, is $3\frac{3}{14}, 3\frac{5}{9}, 3\frac{6}{7}$.

35. **ANALYZE GRAPHS** Several students were asked to name their favorite free-time activity. Are more than half the students represented by any one category? Explain your reasoning.



The total number of students surveyed was $9 + 10 + 4 + 7 + 11 + 13 = 54$. The most students in any one category is $\frac{13}{54}$, which does not round up to $\frac{1}{2}$. Therefore, more than half of the students are not represented by any one category.

CHALLENGE Round each number to the nearest fourth. Explain your reasoning.

37. $\frac{79}{100}$

$\frac{75}{100} = \frac{3}{4}$

and

$\frac{79}{100} \approx \frac{75}{100}$

Therefore,

$\frac{79}{100} \approx \frac{3}{4}$.

Name: **School:** **Grade:** **Class:**

39. **Which One Doesn't Belong?** Identify the number that does not belong with the other three. Explain your reasoning.

$3\frac{7}{8}$	$4\frac{4}{5}$	$4\frac{2}{7}$	$3\frac{8}{9}$

$4\frac{4}{5}$; The other numbers round to 4.

41. **WRITING IN MATH** Explain how to decide when to round a fraction to 0, $\frac{1}{2}$, or 1 when rounding to the nearest half.

Sample answer: If the numerator and denominator are close in value, round to 1. If the denominator is about twice as much as the numerator, round to $\frac{1}{2}$. If there is a great difference in the value of the numerator and denominator, round to 0.

43. The pages in Brooke's scrapbook are $9\frac{3}{4}$ inches by $10\frac{3}{8}$ inches. To the nearest half inch, what is the largest photograph she can place on one page?

F 9 inches by 10 inches

G $9\frac{1}{2}$ inches by 10 inches

H 9 inches by $10\frac{1}{2}$ inches

J $9\frac{1}{2}$ inches by $10\frac{1}{2}$ inches

The photograph has to be smaller than the page. Therefore, round down the size of the page.

$9\frac{3}{4}$ in. rounds down to $9\frac{1}{2}$ in.

$10\frac{3}{8}$ in. rounds down to 10 in.

The answer is G.

Write each fraction or mixed number as a decimal.

45. $\frac{1}{8}$

$$\frac{1}{8} = \frac{125}{1000}$$
$$= 0.125$$

47. $\frac{2}{5}$

$$\frac{2}{5} = \frac{4}{10}$$
$$= 0.4$$

Name: **School:** **Grade:** **Class:**

49. **ANTARCTICA** The average depth of ice covering Antarctica is about 1.12 miles. Write this depth as a mixed number in simplest form.

$$1.12 = 1\frac{12}{100}$$

$$= 1\frac{3}{25} \text{ Divide by the GCF, } 4.$$

The depth of ice covering Antarctica is $1\frac{3}{25}$.