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Chapter 5 - Operations with Fractions - Mid-Chapter Quiz: Lessons 5-1 through 5-5

Round each number to the nearest half.

1. $\frac{7}{8}$

The numerator of $\frac{7}{8}$ is almost as large as the denominator. So, $\frac{7}{8}$ rounds to 1.

1

2. $3\frac{2}{7}$

The numerator of $\frac{2}{7}$ is about half the denominator. So, $3\frac{2}{7}$ rounds to $3\frac{1}{2}$.

$3\frac{1}{2}$

3. $6\frac{3}{4}$

The numerator of $\frac{3}{4}$ is almost as large as the denominator. So, $6\frac{3}{4}$ rounds to 7.

7

4. **STICKERS** Find the length of the sticker to the nearest half inch.

1 in.

1 in.

5. **SCHOOL** It takes Monica $1\frac{3}{4}$ minutes to walk to the bus stop. Should she leave her house $1\frac{1}{2}$ minutes or 2 minutes before the bus arrives?

Monica should reach the stop before the bus does. Therefore, you round up. Monica should leave 2 min. before the bus arrives.

2 min

6. **MAZES** In a corn maze, you begin by walking north. You turn at the next right and then at the next left. In which direction are you facing now? Use the *act it out* strategy.

When you turn at the next right you are facing east. When you turn at the next left, you are facing north again.

North

7. **ART** Tia is making a sign with her name to hang in her bedroom. She wants each letter of her name different colors. How many different ways can she write her name using red, green, and yellow markers? Use the *act it out* strategy.

T	I	A
red	green	yellow
red	yellow	green
green	red	yellow
green	yellow	red
yellow	red	green
yellow	green	red

Tia can write her name in 6 different ways.

6

Add or subtract. Write in simplest form.

8. $\frac{5}{9}+\frac{7}{9}$

$$\frac{5}{9}+\frac{7}{9}=\frac{5+7}{9}$$
$$=\frac{12}{9}$$
$$=1\frac{3}{9}\text{ or }1\frac{1}{3}$$

$1\frac{1}{3}$

9. $\frac{9}{11}-\frac{5}{11}$

$$\frac{9}{11}-\frac{5}{11}=\frac{9-5}{11}$$
$$=\frac{4}{11}$$

$\frac{4}{11}$

10. $\frac{1}{6}+\frac{5}{6}$

$$\frac{1}{6}+\frac{5}{6}=\frac{1+5}{6}$$

$$=\frac{6}{6}\text{ or }1$$

1

11. **MEASUREMENT** How much longer is a section of rope measuring $\frac{11}{16}$ inch than a section of rope measuring $\frac{7}{16}$ inch? Write in simplest form.

$$\frac{11}{16}-\frac{7}{16}=\frac{4}{16}=\frac{1}{4}$$

The rope is $\frac{1}{4}$ in. longer.

$\frac{1}{4}$ in.

Add or subtract. Write in simplest form.

12. $\frac{5}{8}+\frac{3}{4}$

$$\frac{5}{8}+\frac{3}{4}=\frac{5}{8}+\frac{6}{8}=\frac{11}{8}=1\frac{3}{8}$$

$1\frac{3}{8}$

13. $\frac{2}{3}-\frac{1}{2}$

$$\frac{2}{3}-\frac{1}{2}=\frac{4}{6}-\frac{3}{6}=\frac{1}{6}$$

$\frac{1}{6}$

14. $\frac{3}{5}+\frac{5}{6}$

$$\frac{3}{5}+\frac{5}{6}=\frac{18}{30}+\frac{25}{30}=\frac{43}{30}=1\frac{13}{30}$$

$1\frac{13}{30}$

15. **MULTIPLE CHOICE** On Tuesday, Trent spent $\frac{11}{20}$ hour on the Internet. On Wednesday, he spent $\frac{8}{15}$ hour on the Internet. How much more time did Trent spend on the Internet on Tuesday than on Wednesday?

A $\frac{1}{60}$ hour

B $\frac{1}{20}$ hour

C $\frac{1}{15}$ hour

D $\frac{1}{12}$ hour

$$\frac{11}{20}-\frac{8}{15}=\frac{33}{60}-\frac{32}{60}=\frac{1}{60}$$

Trent spent $\frac{1}{60}$ of an hour more on the Internet Tuesday than on Wednesday.

A

Add or subtract. Write in simplest form.

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

$$1\frac{5}{12}+4\frac{4}{12}=5\frac{9}{12}=5\frac{3}{4}$$

$5\frac{3}{4}$

17. $5\frac{1}{8}-3\frac{1}{2}$

$$5\frac{1}{8}-3\frac{1}{2}=5\frac{1}{8}-3\frac{4}{8}=4\frac{9}{8}-3\frac{4}{8}=1\frac{5}{8}$$

$1\frac{5}{8}$

18. $8\frac{1}{6}+7\frac{3}{4}$

$$8\frac{1}{6}+7\frac{3}{4}=8\frac{2}{12}+7\frac{9}{12}=15\frac{11}{12}$$

$$15\frac{11}{12}$$

19. **CRAFTS** Tiffany cut $1\frac{9}{32}$ inches from each side of a square piece of scrapbook paper. If the scrapbook paper now measures $5\frac{1}{4}$ inches on each side, what was its original side length?

$$5\frac{1}{4}+1\frac{9}{32}+1\frac{9}{32}=5\frac{8}{32}+1\frac{9}{32}+1\frac{9}{32}=7\frac{26}{32}$$
$$=7\frac{13}{16}$$

$$7\frac{13}{16}$$

20. **MULTIPLE CHOICE** To win horse racing's Triple Crown, a horse must win all three races shown. How much longer is the longest race than the shortest?

Race	Length (mi)
Kentucky Derby	$1\frac{1}{4}$
Preakness Stakes	$1\frac{3}{16}$
Belmont Stakes	$1\frac{1}{2}$

F $\frac{1}{4}$ mi

G $\frac{5}{16}$ mi

H $\frac{1}{2}$ mi

J $1\frac{1}{16}$ mi

Explore: You need to find out how much longer the longest race is than the shortest. You know the lengths of all the tracks. You see that the lengths are given in mixed numbers whose fractions have different denominators. You also see that the whole number in each mixed number is the same, 1.
Plan: First, you need to find out which track is the longest. Start by finding the LCM of the denominators of the three fractions and rename the fractions using the LCM. Since all the tracks have the same whole number, you can simply compare the numerators of the fractions to see which track is the longest and shortest. Then, subtract to find the difference between the longest and shortest track.
Solve: The LCM for the three fractions is 16.

$\frac{1}{4}=\frac{4}{16};\frac{3}{16}=\frac{3}{16};\frac{1}{2}=\frac{8}{16}$

$\frac{8}{16}$ is the greatest and $\frac{3}{16}$ is the least.

$1\frac{8}{16}-1\frac{3}{16}=\frac{5}{16}$

So, the longest race is $\frac{5}{16}$ miles longer than the shortest.

Check: G, The answer seems reasonable. You can check your answer by graphing the fractions on a number line.

G; You need to compare the mixed numbers to determine the longest and shortest race and then you can find the difference of the longest and shortest races. First, write the mixed numbers with the least common denominator of 16: $1\frac{1}{4}=1\frac{4}{16}$, $1\frac{3}{16}=1\frac{3}{16}$, and $1\frac{1}{2}=1\frac{8}{16}$. Since $1\frac{3}{16}<1\frac{4}{16}<1\frac{8}{16}$, find the difference of $1\frac{8}{16}$ and $1\frac{3}{16}$. $1\frac{8}{16}-1\frac{3}{16}=\frac{5}{16}$. Therefore, the longest race, the Belmont Stakes, is $\frac{5}{16}$ mile longer than the shortest race, the Preakness Stakes.