UNIT 16 EXERCISES 1-5

FRACTIONS

2014B

2. **Answer (C):** The special allows Orvin to purchase balloons at $\frac{1+\frac{2}{3}}{2} = \frac{5}{6}$ times the regular price. Because Orvin had just enough money to purchase 30 balloons at the regular price, he may now purchase $30 \cdot \frac{6}{5} = 36$ balloons.

1999

3. **(E)** The desired number is the arithmetic average or mean:

$$\frac{1}{2}\left(\frac{1}{8} + \frac{1}{10}\right) = \frac{1}{2} \cdot \frac{18}{80} = \frac{9}{80}.$$

2005B

3. **(C)** The number of CDs that Brianna will finally buy is three times the number she has already bought. The fraction of her money that will be required for all the purchases is $(3)(1/5) = 3/5$. The fraction she will have left is $1 - 3/5 = 2/5$.

2008A

3. **Answer (C):** Note that $\frac{2}{3}$ of 10 bananas is $\frac{20}{3}$ bananas, which are worth as much as 8 oranges. So one banana is worth as much as $8 \cdot \frac{3}{20} = \frac{6}{5}$ oranges. Therefore $\frac{1}{2}$ of 5 bananas are worth as much as $\frac{5}{2} \cdot \frac{6}{5} = 3$ oranges.

2009A

3. **Answer (B):** The number is

$$\frac{1}{4} + \frac{1}{3}\left(\frac{3}{4} - \frac{1}{4}\right) = \frac{1}{4} + \frac{1}{3} \cdot \frac{1}{2} = \frac{1}{4} + \frac{1}{6} = \frac{5}{12}.$$

2002B

4. **(E)** The number $\frac{1}{2} + \frac{1}{3} + \frac{1}{7} + \frac{1}{n}$ is greater than 0 and less than $\frac{1}{2} + \frac{1}{3} + \frac{1}{7} + \frac{1}{1} < 2$. Hence,

$$\frac{1}{2} + \frac{1}{3} + \frac{1}{7} + \frac{1}{n} = \frac{41}{42} + \frac{1}{n}$$

is an integer precisely when it is equal to 1. This implies that $n = 42$, so the answer is (E).

2012A   4. **Answer (C):** The ratio of blue marbles to red marbles is $3:2$. If the number of red marbles is doubled, the ratio will be $3:4$, and the fraction of marbles that are red will be $\frac{4}{3+4} = \frac{4}{7}$.

2006A   5. **(D)** Each slice of plain pizza cost \$1. Dave paid \$2 for the anchovies in addition to \$5 for the five slices of pizza that he ate, for a total of \$7. Doug paid only \$3 for the three slices of pizza that he ate. Hence Dave paid $7 - 3 = 4$ dollars more than Doug.