

## Answer Key

### Quantitative Review

1.  $\frac{1}{2}$   
 $\frac{1}{2} = \frac{1}{2} \cdot \frac{2}{2} = \frac{2}{4}$   
 $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$
2.  $\frac{2}{3}$   
 $\frac{2}{3} = \frac{2}{3} \cdot \frac{2}{2} = \frac{4}{6}$   
 $\frac{4}{6} + \frac{2}{6} = \frac{6}{6} = 1$
3.  $\frac{1}{2}$   
 $\frac{1}{2} = \frac{1}{2} \cdot \frac{2}{2} = \frac{2}{4}$   
 $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$
4.  $\frac{2}{3}$   
 $\frac{2}{3} = \frac{2}{3} \cdot \frac{2}{2} = \frac{4}{6}$   
 $\frac{4}{6} + \frac{2}{6} = \frac{6}{6} = 1$
5.  $\frac{1}{2}$   
 $\frac{1}{2} = \frac{1}{2} \cdot \frac{2}{2} = \frac{2}{4}$   
 $\frac{2}{4} + \frac{1}{4} = \frac{3}{4}$
6.  $\frac{2}{3}$   
 $\frac{2}{3} = \frac{2}{3} \cdot \frac{2}{2} = \frac{4}{6}$   
 $\frac{4}{6} + \frac{2}{6} = \frac{6}{6} = 1$
7. Commutative property of addition
8. Associative property of addition
9. Identity property of addition
10. Inverse property of addition
11. Distributive property
12. Inverse property of multiplication.  $100 \cdot \frac{1}{100}$   
 $100 = 100$ ;  $100 \cdot 25 = 2500$ ;  $100 \cdot 50 = 5000$ ;  $100 \cdot 75 = 7500$   
 $100 = 100$ ;  $100 \cdot 25 = 2500$ ;  $100 \cdot 50 = 5000$ ;  $100 \cdot 75 = 7500$   
 $100 \cdot 100 = 10000$ ;  $100 \cdot 200 = 20000$ ;  $100 \cdot 300 = 30000$   
 $100 \cdot 400 = 40000$ ;  $100 \cdot 500 = 50000$ ;  $100 \cdot 600 = 60000$   
 $100 \cdot 700 = 70000$ ;  $100 \cdot 800 = 80000$ ;  $100 \cdot 900 = 90000$   
 $100 \cdot 1000 = 100000$ ;  $100 \cdot 1100 = 110000$ ;  $100 \cdot 1200 = 120000$   
 $100 \cdot 1300 = 130000$ ;  $100 \cdot 1400 = 140000$ ;  $100 \cdot 1500 = 150000$   
 $100 \cdot 1600 = 160000$ ;  $100 \cdot 1700 = 170000$ ;  $100 \cdot 1800 = 180000$   
 $100 \cdot 1900 = 190000$ ;  $100 \cdot 2000 = 200000$
13.  $\frac{1}{2}$   $\frac{1}{2} = \frac{1}{2} \cdot \frac{2}{2} = \frac{2}{4}$   $\frac{2}{4} + \frac{2}{4} = \frac{4}{4} = 1$   
 $\frac{1}{3}$   $\frac{1}{3} = \frac{1}{3} \cdot \frac{3}{3} = \frac{3}{9}$   $\frac{3}{9} + \frac{6}{9} = \frac{9}{9} = 1$   
 $\frac{1}{4}$   $\frac{1}{4} = \frac{1}{4} \cdot \frac{4}{4} = \frac{4}{16}$   $\frac{4}{16} + \frac{12}{16} = \frac{16}{16} = 1$   
 $\frac{1}{5}$   $\frac{1}{5} = \frac{1}{5} \cdot \frac{5}{5} = \frac{5}{25}$   $\frac{5}{25} + \frac{20}{25} = \frac{25}{25} = 1$   
 $\frac{1}{6}$   $\frac{1}{6} = \frac{1}{6} \cdot \frac{6}{6} = \frac{6}{36}$   $\frac{6}{36} + \frac{30}{36} = \frac{36}{36} = 1$   
 $\frac{1}{7}$   $\frac{1}{7} = \frac{1}{7} \cdot \frac{7}{7} = \frac{7}{49}$   $\frac{7}{49} + \frac{42}{49} = \frac{49}{49} = 1$   
 $\frac{1}{8}$   $\frac{1}{8} = \frac{1}{8} \cdot \frac{8}{8} = \frac{8}{64}$   $\frac{8}{64} + \frac{56}{64} = \frac{64}{64} = 1$   
 $\frac{1}{9}$   $\frac{1}{9} = \frac{1}{9} \cdot \frac{9}{9} = \frac{9}{81}$   $\frac{9}{81} + \frac{72}{81} = \frac{81}{81} = 1$   
 $\frac{1}{10}$   $\frac{1}{10} = \frac{1}{10} \cdot \frac{10}{10} = \frac{10}{100}$   $\frac{10}{100} + \frac{90}{100} = \frac{100}{100} = 1$   
 $\frac{1}{11}$   $\frac{1}{11} = \frac{1}{11} \cdot \frac{11}{11} = \frac{11}{121}$   $\frac{11}{121} + \frac{110}{121} = \frac{121}{121} = 1$   
 $\frac{1}{12}$   $\frac{1}{12} = \frac{1}{12} \cdot \frac{12}{12} = \frac{12}{144}$   $\frac{12}{144} + \frac{132}{144} = \frac{144}{144} = 1$   
 $\frac{1}{13}$   $\frac{1}{13} = \frac{1}{13} \cdot \frac{13}{13} = \frac{13}{169}$   $\frac{13}{169} + \frac{156}{169} = \frac{169}{169} = 1$   
 $\frac{1}{14}$   $\frac{1}{14} = \frac{1}{14} \cdot \frac{14}{14} = \frac{14}{196}$   $\frac{14}{196} + \frac{182}{196} = \frac{196}{196} = 1$   
 $\frac{1}{15}$   $\frac{1}{15} = \frac{1}{15} \cdot \frac{15}{15} = \frac{15}{225}$   $\frac{15}{225} + \frac{210}{225} = \frac{225}{225} = 1$   
 $\frac{1}{16}$   $\frac{1}{16} = \frac{1}{16} \cdot \frac{16}{16} = \frac{16}{256}$   $\frac{16}{256} + \frac{240}{256} = \frac{256}{256} = 1$   
 $\frac{1}{17}$   $\frac{1}{17} = \frac{1}{17} \cdot \frac{17}{17} = \frac{17}{289}$   $\frac{17}{289} + \frac{272}{289} = \frac{289}{289} = 1$   
 $\frac{1}{18}$   $\frac{1}{18} = \frac{1}{18} \cdot \frac{18}{18} = \frac{18}{324}$   $\frac{18}{324} + \frac{306}{324} = \frac{324}{324} = 1$   
 $\frac{1}{19}$   $\frac{1}{19} = \frac{1}{19} \cdot \frac{19}{19} = \frac{19}{361}$   $\frac{19}{361} + \frac{342}{361} = \frac{361}{361} = 1$   
 $\frac{1}{20}$   $\frac{1}{20} = \frac{1}{20} \cdot \frac{20}{20} = \frac{20}{400}$   $\frac{20}{400} + \frac{380}{400} = \frac{400}{400} = 1$
14.  $a + b = 0$   
 $\frac{1}{2} + \frac{1}{2} = 1$   
 $\frac{1}{3} + \frac{2}{3} = 1$   
 $\frac{1}{4} + \frac{3}{4} = 1$   
 $\frac{1}{5} + \frac{4}{5} = 1$   
 $\frac{1}{6} + \frac{5}{6} = 1$   
 $\frac{1}{7} + \frac{6}{7} = 1$   
 $\frac{1}{8} + \frac{7}{8} = 1$   
 $\frac{1}{9} + \frac{8}{9} = 1$   
 $\frac{1}{10} + \frac{9}{10} = 1$   
 $\frac{1}{11} + \frac{10}{11} = 1$   
 $\frac{1}{12} + \frac{11}{12} = 1$   
 $\frac{1}{13} + \frac{12}{13} = 1$   
 $\frac{1}{14} + \frac{13}{14} = 1$   
 $\frac{1}{15} + \frac{14}{15} = 1$   
 $\frac{1}{16} + \frac{15}{16} = 1$   
 $\frac{1}{17} + \frac{16}{17} = 1$   
 $\frac{1}{18} + \frac{17}{18} = 1$   
 $\frac{1}{19} + \frac{18}{19} = 1$   
 $\frac{1}{20} + \frac{19}{20} = 1$
15.  $a + b = 0$   
 $\frac{1}{2} + \frac{1}{2} = 1$   
 $\frac{1}{3} + \frac{2}{3} = 1$   
 $\frac{1}{4} + \frac{3}{4} = 1$   
 $\frac{1}{5} + \frac{4}{5} = 1$   
 $\frac{1}{6} + \frac{5}{6} = 1$   
 $\frac{1}{7} + \frac{6}{7} = 1$   
 $\frac{1}{8} + \frac{7}{8} = 1$   
 $\frac{1}{9} + \frac{8}{9} = 1$   
 $\frac{1}{10} + \frac{9}{10} = 1$   
 $\frac{1}{11} + \frac{10}{11} = 1$   
 $\frac{1}{12} + \frac{11}{12} = 1$   
 $\frac{1}{13} + \frac{12}{13} = 1$   
 $\frac{1}{14} + \frac{13}{14} = 1$   
 $\frac{1}{15} + \frac{14}{15} = 1$   
 $\frac{1}{16} + \frac{15}{16} = 1$   
 $\frac{1}{17} + \frac{16}{17} = 1$   
 $\frac{1}{18} + \frac{17}{18} = 1$   
 $\frac{1}{19} + \frac{18}{19} = 1$   
 $\frac{1}{20} + \frac{19}{20} = 1$
16.  $a + b = 0$   
 $\frac{1}{2} + \frac{1}{2} = 1$   
 $\frac{1}{3} + \frac{2}{3} = 1$   
 $\frac{1}{4} + \frac{3}{4} = 1$   
 $\frac{1}{5} + \frac{4}{5} = 1$   
 $\frac{1}{6} + \frac{5}{6} = 1$   
 $\frac{1}{7} + \frac{6}{7} = 1$   
 $\frac{1}{8} + \frac{7}{8} = 1$   
 $\frac{1}{9} + \frac{8}{9} = 1$   
 $\frac{1}{10} + \frac{9}{10} = 1$   
 $\frac{1}{11} + \frac{10}{11} = 1$   
 $\frac{1}{12} + \frac{11}{12} = 1$   
 $\frac{1}{13} + \frac{12}{13} = 1$   
 $\frac{1}{14} + \frac{13}{14} = 1$   
 $\frac{1}{15} + \frac{14}{15} = 1$   
 $\frac{1}{16} + \frac{15}{16} = 1$   
 $\frac{1}{17} + \frac{16}{17} = 1$   
 $\frac{1}{18} + \frac{17}{18} = 1$   
 $\frac{1}{19} + \frac{18}{19} = 1$   
 $\frac{1}{20} + \frac{19}{20} = 1$

17.  $a + b = 0$   
 $\frac{1}{2} + \frac{1}{2} = 1$   
 $\frac{1}{3} + \frac{2}{3} = 1$   
 $\frac{1}{4} + \frac{3}{4} = 1$   
 $\frac{1}{5} + \frac{4}{5} = 1$   
 $\frac{1}{6} + \frac{5}{6} = 1$   
 $\frac{1}{7} + \frac{6}{7} = 1$   
 $\frac{1}{8} + \frac{7}{8} = 1$   
 $\frac{1}{9} + \frac{8}{9} = 1$   
 $\frac{1}{10} + \frac{9}{10} = 1$   
 $\frac{1}{11} + \frac{10}{11} = 1$   
 $\frac{1}{12} + \frac{11}{12} = 1$   
 $\frac{1}{13} + \frac{12}{13} = 1$   
 $\frac{1}{14} + \frac{13}{14} = 1$   
 $\frac{1}{15} + \frac{14}{15} = 1$   
 $\frac{1}{16} + \frac{15}{16} = 1$   
 $\frac{1}{17} + \frac{16}{17} = 1$   
 $\frac{1}{18} + \frac{17}{18} = 1$   
 $\frac{1}{19} + \frac{18}{19} = 1$   
 $\frac{1}{20} + \frac{19}{20} = 1$
18.  $a + b = 0$   $\frac{1}{2} + \frac{1}{2} = 1$   $\frac{1}{3} + \frac{2}{3} = 1$   $\frac{1}{4} + \frac{3}{4} = 1$   
 $\frac{1}{5} + \frac{4}{5} = 1$   $\frac{1}{6} + \frac{5}{6} = 1$   $\frac{1}{7} + \frac{6}{7} = 1$   
 $\frac{1}{8} + \frac{7}{8} = 1$   $\frac{1}{9} + \frac{8}{9} = 1$   $\frac{1}{10} + \frac{9}{10} = 1$   
 $\frac{1}{11} + \frac{10}{11} = 1$   $\frac{1}{12} + \frac{11}{12} = 1$   $\frac{1}{13} + \frac{12}{13} = 1$   
 $\frac{1}{14} + \frac{13}{14} = 1$   $\frac{1}{15} + \frac{14}{15} = 1$   $\frac{1}{16} + \frac{15}{16} = 1$   
 $\frac{1}{17} + \frac{16}{17} = 1$   $\frac{1}{18} + \frac{17}{18} = 1$   $\frac{1}{19} + \frac{18}{19} = 1$   
 $\frac{1}{20} + \frac{19}{20} = 1$
19.  $a + b = 0$   $\frac{1}{2} + \frac{1}{2} = 1$   $\frac{1}{3} + \frac{2}{3} = 1$   $\frac{1}{4} + \frac{3}{4} = 1$   
 $\frac{1}{5} + \frac{4}{5} = 1$   $\frac{1}{6} + \frac{5}{6} = 1$   $\frac{1}{7} + \frac{6}{7} = 1$   
 $\frac{1}{8} + \frac{7}{8} = 1$   $\frac{1}{9} + \frac{8}{9} = 1$   $\frac{1}{10} + \frac{9}{10} = 1$   
 $\frac{1}{11} + \frac{10}{11} = 1$   $\frac{1}{12} + \frac{11}{12} = 1$   $\frac{1}{13} + \frac{12}{13} = 1$   
 $\frac{1}{14} + \frac{13}{14} = 1$   $\frac{1}{15} + \frac{14}{15} = 1$   $\frac{1}{16} + \frac{15}{16} = 1$   
 $\frac{1}{17} + \frac{16}{17} = 1$   $\frac{1}{18} + \frac{17}{18} = 1$   $\frac{1}{19} + \frac{18}{19} = 1$   
 $\frac{1}{20} + \frac{19}{20} = 1$
20.  $a + b = 0$   $\frac{1}{2} + \frac{1}{2} = 1$   $\frac{1}{3} + \frac{2}{3} = 1$   $\frac{1}{4} + \frac{3}{4} = 1$   
 $\frac{1}{5} + \frac{4}{5} = 1$   $\frac{1}{6} + \frac{5}{6} = 1$   $\frac{1}{7} + \frac{6}{7} = 1$   
 $\frac{1}{8} + \frac{7}{8} = 1$   $\frac{1}{9} + \frac{8}{9} = 1$   $\frac{1}{10} + \frac{9}{10} = 1$   
 $\frac{1}{11} + \frac{10}{11} = 1$   $\frac{1}{12} + \frac{11}{12} = 1$   $\frac{1}{13} + \frac{12}{13} = 1$   
 $\frac{1}{14} + \frac{13}{14} = 1$   $\frac{1}{15} + \frac{14}{15} = 1$   $\frac{1}{16} + \frac{15}{16} = 1$   
 $\frac{1}{17} + \frac{16}{17} = 1$   $\frac{1}{18} + \frac{17}{18} = 1$   $\frac{1}{19} + \frac{18}{19} = 1$   
 $\frac{1}{20} + \frac{19}{20} = 1$