

## Lesson #17 – Adding and Subtracting Rational Numbers

**Do Now:** The table below shows the amounts of money (in billions of dollars) that people in the United States spent on dance studios, schools, and halls.

Money Spent on Dancing	
Year	Dollars (billions)
1994	0.906
1995	0.947
1996	1.046
1997	1.08
1998	1.138

a) How much was spent in 1995 and 1996?

1.993

(Grid provided to help you line up decimals)

	0	.	9	4	7
+	1	.	0	4	6
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	1	.	9	9	3

b) How much more was spent in 1998 than in 1997?

0.058

	1	.	<del>1</del> <sup>0</sup>	3	8
-	1	.	0	8	
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	0	.	0	5	8

We learned rules for adding and subtracting positive and negative integers. You can apply the same rules to adding and subtracting positive and negative decimals.

**Directions:** Find the sum or difference.

1) $-12.5 + (-4.55)$ $\begin{array}{r} 12.5 \\ + 4.55 \\ \hline 17.05 \end{array}$ $-17.05$	2) $-5.3 - 11.49$ $-5.3 + (-11.49)$ $\begin{array}{r} 11.49 \\ + 5.3 \\ \hline 16.79 \end{array}$ $-16.79$
3) $7.624 + (-0.05)$ $\begin{array}{r} 7.624 \\ - 0.05 \\ \hline 7.574 \end{array}$ $7.574$	4) $8.91 - 2.745$ $6.165$
5) $5.376 - (-0.08)$ $5.456$	6) $8.93 + 0.367$ $9.297$
7) An item costs \$9.87 plus sales tax of \$0.49. What is the total cost of the item? $\begin{array}{r} 9.87 \\ + 0.49 \\ \hline \end{array}$ $\$10.36$	8) You run 400 meters in 58.01 seconds. What is the difference of your time and the school record of 55.49 seconds? $\begin{array}{r} 58.01 \\ - 55.49 \\ \hline \end{array}$ $2.52$

**Directions:** Add or subtract.

9) $\frac{2}{5} + \frac{2}{5}$ $\frac{4}{5}$	10) $\frac{1}{10} + \frac{5}{10}$ $\frac{6}{10} = \frac{3}{5}$	11) $-\frac{3}{4} + \frac{1}{4}$ $-\frac{2}{4} = -\frac{1}{2}$
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12) $\frac{5}{11} - (-\frac{4}{11})$ $\frac{9}{11}$	13) $\frac{4}{15} - \frac{7}{15}$ $-\frac{1}{5}$	14) $-1\frac{3}{7} - (-2\frac{2}{7})$ $\frac{6}{7}$
15) $3\frac{5}{7} + 2\frac{3}{7}$ $6\frac{1}{7}$	16) $4\frac{3}{5} - 2\frac{4}{5}$ $1\frac{4}{5}$	17) $8 - 6\frac{1}{6}$ $1\frac{5}{6}$

To add or subtract fractions with unlike denominators, find common denominators then follow the rules for adding or subtracting.

18) $-\frac{1}{3} - (-\frac{3}{4})$ $-\frac{1}{3} + \frac{3}{4}$ $-\frac{4}{12} + \frac{9}{12}$ $\frac{5}{12}$	19) $-\frac{5}{6} + (-\frac{1}{2})$ $-\frac{1}{3}$	20) $-\frac{1}{2} + \frac{7}{8}$ $\frac{3}{8}$
21) $-3\frac{1}{2} + 8\frac{1}{3}$ $4\frac{5}{6}$	22) $-1\frac{2}{5} + (-3\frac{1}{3})$ $-4\frac{11}{15}$	23) $2\frac{3}{4} - 6\frac{1}{3}$ $-3\frac{7}{12}$
24) $-3\frac{3}{5} - 4\frac{2}{5}$ $-8$	25) $3\frac{6}{7} + (-1\frac{1}{7})$ $2\frac{5}{7}$	26) $1\frac{2}{7} + (-3\frac{4}{7})$ $-2\frac{2}{7}$

