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## Subtraction up to 4 Digits

# 22

★ Sometimes you need to regroup when subtracting whole numbers.

$$\begin{array}{r}
 \overset{7}{8} \overset{12}{3} \overset{11}{2} \overset{17}{7} \\
 - 4,768 \\
 \hline
 3,559
 \end{array}$$

Follow these steps:

1. Since you can't subtract 8 from 7 in the ones column, rename 2 tens as 1 ten and transfer the other ten to the ones column. Now you have 17 ones.
2. You cannot subtract 6 in the tens column, so rename 3 hundreds as 2 hundreds, and transfer 1 hundred to the tens column. Now there are 11 tens.
3. Since 7 can't be subtracted in the hundreds column, rename 8 thousands as 7 thousands, and transfer 1 thousand to the hundreds column. Now you have 12 hundreds.
4. Subtract 4 from 7 in the thousands column.

Find the difference.

1)  $346 - 29 = 317$

$5,875 - 3,988 = 1887$

$61 - 47 = 14$

2)  $347 - 28 = 319$

$6,875 - 3,988 = 2887$

$719 - 555 = 164$

3)  $3,876 - 29 = 3847$

$7,875 - 4,123 = 3752$

$81 - 76 = 5$

4)  $541 - 99 = 442$

$5,311 - 3,889 = 1422$

$614 - 428 = 186$

5)  $2,946 - 294 = 2652$

$6,910 - 2,119 = 4791$

$565 - 471 = 94$

6)  $864 - 187 = 677$

$2,931 - 2,477 = 454$

$534 - 396 = 138$

7)  $1,746 - 192 = 1554$

$8,753 - 2,889 = 5864$

$6,149 - 58 = 6091$

8)  $638 - 85 = 553$

$5,441 - 2,647 = 2794$

$544 - 192 = 352$

- 9) Neptune is 4,504 million kilometers from the sun, while Pluto is even farther away, at 5,900 million kilometers. How much farther from the sun is Pluto than Neptune? Show your work.  $1396$  million km

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## Subtraction up to 7 Digits

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Are the differences shown below true or false? Show your work.

① T  $4,716,173 - 417,499 = 4,298,674$       F  $736,510 - 2,499 = 743,110$

② F  $5,525,165 - 502,387 = 5,220,877$       T  $836,519 - 4,577 = 831,942$

③ T  $6,334,157 - 624,275 = 5,709,882$       T  $936,518 - 6,655 = 929,863$

④ F  $7,143,149 - 746,163 = 6,693,689$       T  $136,517 - 8,733 = 127,784$

⑤ T  $8,952,132 - 868,251 = 8,083,881$       F  $235,516 - 1,812 = 133,407$

⑥ F  $9,761,124 - 980,342 = 8,708,872$       F  $336,515 - 3,904 = 323,116$

The table below shows the distance sound will travel through different materials in 60 seconds. Use the table to answer questions 7 and 8.

Material	Distance Traveled in 60 Seconds
Air	19,860 meters
Water	89,880 meters
Glass	272,400 meters
Sea Water	91,860 meters

⑦ How much farther will sound travel in glass than water in one minute? 182,520m

⑧ How much greater is the distance sound will travel for two minutes in sea water than the combined distance it will travel for one minute in air and one minute in water?

73980m

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## Subtracting Whole Numbers

27

Subtract.

$$\begin{array}{r} \textcircled{1} \quad 18,637 \\ - 6,598 \\ \hline 12,039 \end{array}$$

$$\begin{array}{r} \phantom{0}98,761 \\ - \phantom{0}2,197 \\ \hline \phantom{0}96,564 \end{array}$$

$$\begin{array}{r} \phantom{0}67,504 \\ - \phantom{0}7,946 \\ \hline \phantom{0}59,558 \end{array}$$

$$\begin{array}{r} \phantom{0}32,222 \\ - \phantom{0}1,999 \\ \hline \phantom{0}30,223 \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad \phantom{0}62,731 \\ - \phantom{0}58,176 \\ \hline \phantom{0}4,555 \end{array}$$

$$\begin{array}{r} \phantom{0}10,020 \\ - \phantom{0}8,943 \\ \hline \phantom{0}1,077 \end{array}$$

$$\begin{array}{r} \phantom{0}1253,832 \\ - \phantom{0}79,983 \\ \hline \phantom{0}1173,849 \end{array}$$

$$\begin{array}{r} \phantom{0}767,932 \\ - \phantom{0}18,408 \\ \hline \phantom{0}749,524 \end{array}$$

$$\begin{array}{r} \textcircled{3} \quad \phantom{0}8,310,402 \\ - \phantom{0}176,185 \\ \hline \phantom{0}8,134,217 \end{array}$$

$$\begin{array}{r} \phantom{0}1,005,381 \\ - \phantom{0}736,956 \\ \hline \phantom{0}268,425 \end{array}$$

$$\begin{array}{r} \phantom{0}4,787,009 \\ - \phantom{0}2,037,984 \\ \hline \phantom{0}2,749,025 \end{array}$$

$$\begin{array}{r} \phantom{0}45,160,980 \\ - \phantom{0}2,971,891 \\ \hline \phantom{0}42,189,089 \end{array}$$

Solve.

- $\textcircled{4}$  The cook at the stadium prepared 17,620 hot dogs to sell to the fans. There were 1,876 hot dogs left at the end of the game. How many hot dogs were purchased by fans?

15,744 hot dogs

- $\textcircled{5}$  There are 554,636 people who live in Denver, Colorado. There are 8,008,278 people living in New York City. What is the difference in population between the two cities?

7,453,642 people

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# Negative Numbers: + and -

Negative Numbers: Numbers less than zero.

### Addition

Pos + Pos = Pos

Pos + Neg = Greater Sign

Neg + Pos = Greater Sign

Neg + Neg = Neg

### Subtraction

5 - 6 becomes 5 + (-6) = -1

-5 - (-6) becomes -5 + 6 = 1

Solve.

$$① \quad -3 + (-2) = \underline{-5}$$

$$② \quad -3 - (-2) = \underline{-1}$$

$$③ \quad -4 + (-5) = \underline{-9}$$

$$④ \quad -10 - (-5) = \underline{-5}$$

$$⑤ \quad -4 - 6 = \underline{-10}$$

$$⑥ \quad 12 - (-12) = \underline{24}$$

$$⑦ \quad 15 + (-29) = \underline{-14}$$

$$⑧ \quad -7 - 7 = \underline{-14}$$

$$⑨ \quad 8 + (-6) = \underline{2}$$

$$⑩ \quad -20 - (-4) = \underline{-16}$$

$$⑪ \quad -25 - 55 = \underline{-80}$$

$$⑫ \quad 60 + (-10) = \underline{50}$$

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# Subtracting Integers

## INTEGERS

Subtract an integer by adding its opposite.

$$-8 - 5 =$$

$$-8 + -5 = -13$$

The negative of a negative is a positive.  $-(-a) = a$

$$-8 - -5 =$$

$$-8 + 5 = -3$$

Rewrite each as an addition problem. Solve.

$$\textcircled{1} -72 - 70 = -72 + (-70) = -142$$

$$\textcircled{2} 52 - (-46) = 52 + 46 = 98$$

$$\textcircled{3} 90 - 49 = 90 + (-49) = 41$$

$$\textcircled{4} 7 - (-95) = 7 + 95 = 102$$

$$\textcircled{5} -55 - (-59) = -55 + 59 = 4$$

$$\textcircled{6} -47 - 20 = -47 + (-20) = -67$$

Solve.

$$\textcircled{7} 57 + (-70) = -13$$

$$\textcircled{8} -32 - (-88) = 56$$

$$\textcircled{9} -84 + (-61) = -145$$

$$\textcircled{10} -18 - 39 = -57$$

$$\textcircled{11} 21 + (-24) = -3$$

$$\textcircled{12} 79 - 55 = 24$$

$$\textcircled{13} 97 + (-99) = -2$$

$$\textcircled{14} 68 - (-73) = 141$$

$$\textcircled{15} -92 + 43 = -49$$

$$\textcircled{16} 49 + (-19) = 30$$

$$\textcircled{17} -18 - (-9) = -9$$

$$\textcircled{18} -34 - 42 = -76$$

$$\textcircled{19} 45 - (-5) = 50$$

$$\textcircled{20} 67 - (-20) = 87$$

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## Subtraction of Integers

25

★ When subtracting integers, change the sign of the number being subtracted, and then add.

$$+15 - +5 = +15 + -5 = +10$$

$$+21 - -7 = +21 + +7 = +28$$

$$-35 - +9 = -35 + -9 = -44$$

Find the difference.

①  $-17 - -87 = 70$        $+45 - +13 = 32$        $-854 - +532 = -1386$

②  $+221 - -79 = 300$        $+85 - +64 = 21$        $+75 - -334 = 409$

③  $-15 - +42 = -57$        $+113 - +68 = 45$        $+1,279 - +125 = 1154$

④  $+381 - +91 = 290$        $+19 - +15 = 4$        $+17 - -49 = 66$

⑤  $-976 - -58 = -918$        $+1,327 - +241 = 1086$        $+59 - -117 = 176$

⑥  $+54 - -63 = 117$        $+9 - +18 = -9$        $+83 - -94 = 177$

- ⑦ Two friends went fishing on a lake. One friend's lure went 23 feet below the lake's surface, while the other friend's lure sank to a depth of 81 feet below the surface. What was the difference in the depths of the lures?

$$(-23) - (-81) = 58 \text{ feet}$$

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## Subtraction of Decimals

24

- ★ When subtracting decimals, make sure the decimals are lined up. Regroup if necessary, and add zeroes to make the numbers the same length.

$$\begin{array}{r}
 831.435 - 27.99 = \\
 \begin{array}{r}
 \phantom{8}2\phantom{0}101313 \\
 831.435 \\
 - 27.990 \\
 \hline
 803.445
 \end{array}
 \end{array}$$

Find the difference.

①  $578.23 - 89.7 =$   
488.53

$1,329.087 - 685.253 =$   
643.834

$91,243.34 - 85.8 =$   
91,157.54

②  $678.204 - 182.6 =$   
495.604

$2,329.118 - 1,746.24 =$   
582.878

$82,243.35 - 132.07 =$   
82,111.28

③  $778.31 - 273.5 =$   
504.81

$3,329.29 - 867.245 =$   
2,462.045

$73,236.46 - 243.6 =$   
72,992.86

④  $878.407 - 364.4 =$   
514.007

$4,329.338 - 3,978.26 =$   
351.078

$64,133.57 - 456.5 =$   
63,677.07

⑤  $978.223 - 5.3 =$   
972.923

$5,329.447 - 199.237 =$   
5,130.21

$55,387.68 - 8.04 =$   
55,379.64

⑥  $878.223 - 4.2 =$   
874.023

$6,329.56 - 2,278.229 =$   
4,051.331

$46,255.79 - 545.2 =$   
45,710.59

⑦  $778.223 - 635.1 =$   
143.123

$7,329.665 - 367.27 =$   
6,962.395

$37,432.81 - 75.1 =$   
37,357.71

⑧  $678.223 - 72.2 =$   
606.023

$8,329.74 - 4,156.218 =$   
4,173.522

$28,342.92 - 85.3 =$   
28,257.62

- ⑨ Juan and Carla were saving money from their after-school jobs. Juan saved \$3,004.15, and Carla saved \$2,997.65. How much more did Juan save than Carla?

\$ 6.50

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## Subtracting Decimals

# 28

- ★ Subtracting numbers with decimals is the same as subtracting whole numbers. Just make sure to line up the decimal points. Add 0s to make numbers the same length.

Rename 4 thousands as  $\xrightarrow{315}$  45.683  
 3 thousands and 10 hundreds.  
 Add them to the hundreds.

$$\begin{array}{r} 45.683 \\ - 6.070 \\ \hline 39.613 \end{array}$$

Subtract.

$$\begin{array}{r} 12.98 \\ - 4.06 \\ \hline 8.92 \end{array}$$

$$\begin{array}{r} 12.15 \\ 893.84 \\ - 29.99 \\ \hline 63.65 \end{array}$$

$$\begin{array}{r} 16.15 \\ 237.64 \\ - 29.99 \\ \hline 7.65 \end{array}$$

$$\begin{array}{r} 11.5 \\ 2324.63 \\ - 97.58 \\ \hline 227.05 \end{array}$$

$$\begin{array}{r} 69.12 \\ 87.037 \\ - 1.569 \\ \hline 85.468 \end{array}$$

$$\begin{array}{r} 4.4 \\ 343.569 \\ - 9.072 \\ \hline 34.497 \end{array}$$

$$\begin{array}{r} 5.1 \\ 79.683 \\ - 5.290 \\ \hline 74.393 \end{array}$$

$$\begin{array}{r} 8.1 \\ 27.910 \\ - 18.664 \\ \hline 9.246 \end{array}$$

$$\begin{array}{r} 1.1 \\ 127.59 \\ - 39.50 \\ \hline 88.09 \end{array}$$

$$\begin{array}{r} 4.5 \\ 767.518 \\ - 15.069 \\ \hline 752.449 \end{array}$$

$$\begin{array}{r} 7.12 \\ 1,248.632 \\ - 16.988 \\ \hline 1,231.644 \end{array}$$

$$\begin{array}{r} 5.18 \\ 8,673.593 \\ - 6,082.094 \\ \hline 2,591.499 \end{array}$$

Solve.

- 4 Jonathan purchased a new table saw for \$1,827.63. He gave the cashier \$1,900.00. How much change should he get back?

\$ 72.37

- 5 A large truck pulled off into a weigh station. The truck weighed 50,873.563 pounds. If the legal weight for trucks is 55,000 pounds, how much more weight could this truck carry?

4126.437 lbs



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## Mixed Practice

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Solve.

1

$$\begin{array}{r} 9,382 \\ + 5,176 \\ \hline 14,558 \end{array}$$

$$\begin{array}{r} 4,080 \\ - 3,561 \\ \hline 519 \end{array}$$

$$\begin{array}{r} 56,704 \\ + 9,746 \\ \hline 66,450 \end{array}$$

$$\begin{array}{r} 22,322 \\ - 9,199 \\ \hline 13,123 \end{array}$$

2

$$\begin{array}{r} 3,810,204 \\ - 671,581 \\ \hline 3,138,623 \end{array}$$

$$\begin{array}{r} 1,605,080 \\ - 981,918 \\ \hline 623,162 \end{array}$$

$$\begin{array}{r} 64.37 \\ + 92.63 \\ \hline 157 \end{array}$$

$$\begin{array}{r} 234.36 \\ - 79.85 \\ \hline 154.51 \end{array}$$

3

$$\begin{array}{r} 677.518 \\ + 15.096 \\ \hline 692.614 \end{array}$$

$$\begin{array}{r} 89.386 \\ - 2.95 \\ \hline 86.436 \end{array}$$

$$\begin{array}{r} 3,786.395 \\ - 8,062.409 \\ \hline -4,276.014 \end{array}$$

$$\begin{array}{r} 4,128.236 \\ + 761.898 \\ \hline 4,890.134 \end{array}$$

4

$$-13 - -13 = 0$$

$$-15 - 8 = -7$$

$$+16 + -3 = 13$$

$$+7.9 - +6.4 = 1.5$$

5

$$+71 - -13 = 84$$

$$0 - -48 = 48$$

$$+16 + -6 = 10$$

$$-63 - 0 = -63$$

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## Mixed Addition and Subtraction Practice

**26**

Find the sum or difference.

$$\textcircled{1} \quad 0.007 + 0.8 + 0.1 = 0.907$$

$$475,091 - 35,486 = 439,605$$

$$\textcircled{2} \quad 232,023 - 191,675 = 40,348$$

$$45.619 + 589.143 = 634.762$$

$$\textcircled{3} \quad 7,812,431 + 78 + 293 =$$

$$7,812,802$$

$$0.651 - 0.56 = 0.091$$

$$\textcircled{4} \quad 5,981,152 - 38,004 =$$

$$5,943,148$$

$$67,134.45 + 8,315,002 = 8,382,136.45$$

$$\textcircled{5} \quad 2 + 54,786 + 99 + 190,743 =$$

$$245,630$$

$$54.36 - 45.6 = 8.76$$

$$\textcircled{6} \quad 0.035 - 0.00057 = 0.03443$$

$$179,007 + 899 + 25.1 = 179,931.1$$

$$\textcircled{7} \quad 89.107 + 777 + 0.22 = 866.327$$

$$3,134,245 - 2,978,766 = 155,479$$

$$\textcircled{8} \quad 35,122 - 2.6 = 35,119.4$$

$$5 + 289,566.2 = 289,571.2$$

- $\textcircled{9}$  Two new movies opened last week. The first movie had box-office receipts of \$5,315,695 and the second movie took in \$7,001,433. What is the difference in the movies' box-office receipts?  $\$1,685,738$

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## Mixed Addition and Subtraction Practice

**27**

Find the sum or difference.

$$\textcircled{1} \quad +97 - -16 = 113 \quad -463 + +98 = -365 \quad +1,659 - -315 = 1,974$$

$$\textcircled{2} \quad +392 - -212 = 604 \quad -3,888 + +162 = -3,726 \quad +19,953 - -4,517 = 24,470$$

$$\textcircled{3} \quad +1,315 - +250 = 1,065 \quad -1,462 + -189 = -1,651 \quad -1,659 - +315 = -1,974$$

$$\textcircled{4} \quad -225 - -159 = -66 \quad +156,341 + +451 = 156,792 \quad -3,221 - -1,212 = -2,009$$

$$\textcircled{5} \quad +38,875 - -428 = 39,303 \quad -758 + +37 = -721 \quad +6,659 - -496 = 7,155$$

$$\textcircled{6} \quad +17 - -91 = 108 \quad -263 + +82 = -181 \quad -3,659 - -7,143 = 3,484$$

$$\textcircled{7} \quad +139 - -157 = 296 \quad -1,798 + +765 = -1,033 \quad +6,361 - -817 = 7,178$$

$$\textcircled{8} \quad +291 - -231 = 522 \quad -422 + +49 = -373 \quad +1,634 - -589 = 2,223$$

- $\textcircled{9}$  Janet said the difference between  $-567$  and  $-332$  was  $-235$ . Explain whether Janet was right or wrong. If her answer was not correct, what is the correct difference?

$$(-567) - (-332) = (-567) + (+332) = -235$$

$\therefore$  Janet was right