

## Inverse Relationships Add/Sub (A)

Instructions: Use the information given to fill in each box.

$$\begin{array}{l} \text{since } 17 + 11 = 28 \\ \text{then } 28 - 17 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 11 + 14 = 25 \\ \text{then } 25 - 11 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 9 + 12 = 21 \\ \text{then } 21 - 9 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 19 + 6 = 25 \\ \text{then } 25 - 19 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 12 + 17 = 29 \\ \text{then } 29 - 12 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 9 + 6 = 15 \\ \text{then } 15 - 9 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 6 + 11 = 17 \\ \text{then } 17 - 6 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 17 + 20 = 37 \\ \text{then } 37 - 17 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 9 + 16 = 25 \\ \text{then } 25 - 9 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 8 + 17 = 25 \\ \text{then } 25 - 8 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 16 + 19 = 35 \\ \text{then } 35 - 16 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 18 + 8 = 26 \\ \text{then } 26 - 18 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 18 + 6 = 24 \\ \text{then } 24 - 18 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 20 + 6 = 26 \\ \text{then } 26 - 20 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 17 + 6 = 23 \\ \text{then } 23 - 17 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 5 + 9 = 14 \\ \text{then } 14 - 5 = \boxed{\phantom{00}} \end{array}$$

## Inverse Relationships Add/Sub (A) Answers

Instructions: Use the information given to fill in each box.

$$\begin{array}{l} \text{since } 17 + 11 = 28 \\ \text{then } 28 - 17 = \boxed{11} \end{array}$$

$$\begin{array}{l} \text{since } 11 + 14 = 25 \\ \text{then } 25 - 11 = \boxed{14} \end{array}$$

$$\begin{array}{l} \text{since } 9 + 12 = 21 \\ \text{then } 21 - 9 = \boxed{12} \end{array}$$

$$\begin{array}{l} \text{since } 19 + 6 = 25 \\ \text{then } 25 - 19 = \boxed{6} \end{array}$$

$$\begin{array}{l} \text{since } 12 + 17 = 29 \\ \text{then } 29 - 12 = \boxed{17} \end{array}$$

$$\begin{array}{l} \text{since } 9 + 6 = 15 \\ \text{then } 15 - 9 = \boxed{6} \end{array}$$

$$\begin{array}{l} \text{since } 6 + 11 = 17 \\ \text{then } 17 - 6 = \boxed{11} \end{array}$$

$$\begin{array}{l} \text{since } 17 + 20 = 37 \\ \text{then } 37 - 17 = \boxed{20} \end{array}$$

$$\begin{array}{l} \text{since } 9 + 16 = 25 \\ \text{then } 25 - 9 = \boxed{16} \end{array}$$

$$\begin{array}{l} \text{since } 8 + 17 = 25 \\ \text{then } 25 - 8 = \boxed{17} \end{array}$$

$$\begin{array}{l} \text{since } 16 + 19 = 35 \\ \text{then } 35 - 16 = \boxed{19} \end{array}$$

$$\begin{array}{l} \text{since } 18 + 8 = 26 \\ \text{then } 26 - 18 = \boxed{8} \end{array}$$

$$\begin{array}{l} \text{since } 18 + 6 = 24 \\ \text{then } 24 - 18 = \boxed{6} \end{array}$$

$$\begin{array}{l} \text{since } 20 + 6 = 26 \\ \text{then } 26 - 20 = \boxed{6} \end{array}$$

$$\begin{array}{l} \text{since } 17 + 6 = 23 \\ \text{then } 23 - 17 = \boxed{6} \end{array}$$

$$\begin{array}{l} \text{since } 5 + 9 = 14 \\ \text{then } 14 - 5 = \boxed{9} \end{array}$$

## Inverse Relationships Mult/Div (A)

Instructions: Use the information given to fill in each box.

$$\begin{array}{l} \text{since } 4 \times 6 = 24 \\ \text{then } 24 \div 4 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 4 \times 6 = 24 \\ \text{then } 24 \div 4 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 1 \times 6 = 6 \\ \text{then } 6 \div 1 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 8 \times 5 = 40 \\ \text{then } 40 \div 8 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 3 \times 4 = 12 \\ \text{then } 12 \div 3 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 1 \times 3 = 3 \\ \text{then } 3 \div 1 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 6 \times 8 = 48 \\ \text{then } 48 \div 6 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 2 \times 2 = 4 \\ \text{then } 4 \div 2 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 1 \times 3 = 3 \\ \text{then } 3 \div 1 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 8 \times 1 = 8 \\ \text{then } 8 \div 8 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 3 \times 9 = 27 \\ \text{then } 27 \div 3 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 4 \times 4 = 16 \\ \text{then } 16 \div 4 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 9 \times 4 = 36 \\ \text{then } 36 \div 9 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 7 \times 3 = 21 \\ \text{then } 21 \div 7 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 1 \times 4 = 4 \\ \text{then } 4 \div 1 = \boxed{\phantom{00}} \end{array}$$

$$\begin{array}{l} \text{since } 7 \times 5 = 35 \\ \text{then } 35 \div 7 = \boxed{\phantom{00}} \end{array}$$

## Inverse Relationships Mult/Div (A) Answers

Instructions: Use the information given to fill in each box.

$$\begin{array}{l} \text{since } 4 \times 6 = 24 \\ \text{then } 24 \div 4 = \boxed{6} \end{array}$$

$$\begin{array}{l} \text{since } 4 \times 6 = 24 \\ \text{then } 24 \div 4 = \boxed{6} \end{array}$$

$$\begin{array}{l} \text{since } 1 \times 6 = 6 \\ \text{then } 6 \div 1 = \boxed{6} \end{array}$$

$$\begin{array}{l} \text{since } 8 \times 5 = 40 \\ \text{then } 40 \div 8 = \boxed{5} \end{array}$$

$$\begin{array}{l} \text{since } 3 \times 4 = 12 \\ \text{then } 12 \div 3 = \boxed{4} \end{array}$$

$$\begin{array}{l} \text{since } 1 \times 3 = 3 \\ \text{then } 3 \div 1 = \boxed{3} \end{array}$$

$$\begin{array}{l} \text{since } 6 \times 8 = 48 \\ \text{then } 48 \div 6 = \boxed{8} \end{array}$$

$$\begin{array}{l} \text{since } 2 \times 2 = 4 \\ \text{then } 4 \div 2 = \boxed{2} \end{array}$$

$$\begin{array}{l} \text{since } 1 \times 3 = 3 \\ \text{then } 3 \div 1 = \boxed{3} \end{array}$$

$$\begin{array}{l} \text{since } 8 \times 1 = 8 \\ \text{then } 8 \div 8 = \boxed{1} \end{array}$$

$$\begin{array}{l} \text{since } 3 \times 9 = 27 \\ \text{then } 27 \div 3 = \boxed{9} \end{array}$$

$$\begin{array}{l} \text{since } 4 \times 4 = 16 \\ \text{then } 16 \div 4 = \boxed{4} \end{array}$$

$$\begin{array}{l} \text{since } 9 \times 4 = 36 \\ \text{then } 36 \div 9 = \boxed{4} \end{array}$$

$$\begin{array}{l} \text{since } 7 \times 3 = 21 \\ \text{then } 21 \div 7 = \boxed{3} \end{array}$$

$$\begin{array}{l} \text{since } 1 \times 4 = 4 \\ \text{then } 4 \div 1 = \boxed{4} \end{array}$$

$$\begin{array}{l} \text{since } 7 \times 5 = 35 \\ \text{then } 35 \div 7 = \boxed{5} \end{array}$$

# Unknown Variables in Equations (A)

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Determine the value of each variable.

1.  $9 \times n = 45$

2.  $p = 24 \div 6$

3.  $15 - x = 9$

4.  $14 \div 7 = m$

5.  $h \div 1 = 8$

6.  $4 = v \div 6$

7.  $48 = 8 \times b$

8.  $y + 5 = 12$

9.  $56 \div 8 = k$

10.  $j \div 5 = 3$

11.  $72 \div 8 = d$

12.  $2 = 12 \div z$

13.  $10 \div t = 5$

14.  $2 = 1 \times a$

15.  $3 = 8 - w$

16.  $c = 7 + 2$

17.  $r = 10 \div 5$

18.  $f + 9 = 10$

19.  $7 + g = 12$

20.  $18 = s \times 6$

# Unknown Variables in Equations (A) Answers

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Determine the value of each variable.

1.  $9 \times n = 45$

$n = 5$

2.  $p = 24 \div 6$

$p = 4$

3.  $15 - x = 9$

$x = 6$

4.  $14 \div 7 = m$

$m = 2$

5.  $h \div 1 = 8$

$h = 8$

6.  $4 = v \div 6$

$v = 24$

7.  $48 = 8 \times b$

$b = 6$

8.  $y + 5 = 12$

$y = 7$

9.  $56 \div 8 = k$

$k = 7$

10.  $j \div 5 = 3$

$j = 15$

11.  $72 \div 8 = d$

$d = 9$

12.  $2 = 12 \div z$

$z = 6$

13.  $10 \div t = 5$

$t = 2$

14.  $2 = 1 \times a$

$a = 2$

15.  $3 = 8 - w$

$w = 5$

16.  $c = 7 + 2$

$c = 9$

17.  $r = 10 \div 5$

$r = 2$

18.  $f + 9 = 10$

$f = 1$

19.  $7 + g = 12$

$g = 5$

20.  $18 = s \times 6$

$s = 3$

**Translating Phrases: One-Step Equations**

ES1

Translate each verbal phrase into an algebraic equation.

1) Sum of  $x$  and 3 gives 5

\_\_\_\_\_

2) 2 multiplied by  $b$  is equal to 8

\_\_\_\_\_

3) Difference between  $y$  and 23 is 12

\_\_\_\_\_

4) Product of 4 and  $z$  is the same as 16

\_\_\_\_\_

5) Total of  $m$  and 3 is 21

\_\_\_\_\_

6)  $b$  divides 6 gives 1

\_\_\_\_\_

7)  $n$  minus 2 is equal to 16

\_\_\_\_\_

8) 11 times  $p$  is 33

\_\_\_\_\_

9) 20 exceeds  $c$  gives 18

\_\_\_\_\_

10) One-half of  $x$  is equal to 3

\_\_\_\_\_

**Answer Key****Translating Phrases: One-Step Equations**

ES1

Translate each verbal phrase into an algebraic equation.

1) Sum of x and 3 gives 5

$x + 3 = 5$

2) 2 multiplied by b is equal to 8

$2b = 8$

3) Difference between y and 23 is 12

$y - 23 = 12$

4) Product of 4 and z is the same as 16

$4z = 16$

5) Total of m and 3 is 21

$m + 3 = 21$

6) b divides 6 gives 1

$\frac{6}{b} = 1$

7) n minus 2 is equal to 16

$n - 2 = 16$

8) 11 times p is 33

$11p = 33$

9) 20 exceeds c gives 18

$20 - c = 18$

10) One-half of x is equal to 3

$\frac{x}{2} = 3$



**One-Step Equations - Integers**

Add/Sub: S1

- 1) Natalie buys organic almonds priced at \$77 from the grocery store. How much did she pay the cashier, if she received \$23 in change?

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- 2) Lara and Mae participated in a quiz contest. They scored 23 points in all. If Lara scored 9 points, how many points did Mae score?

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- 3) John was gifted a pack of crayons. He gave 13 crayons to his friend Rhea and was left with 11 crayons. How many crayons did the pack contain?

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- 4) Smith and his friends are gaming online on a popular website. An hour later, 6 friends go offline. Five of them continue playing. How many of them were gaming online initially?

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- 5) Trevor takes up a test at school and completes it in an hour. The test has two sections. If he takes 35 minutes to complete the first section, how much time does he have left to complete the second section?

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**Answer key****One-Step Equations - Integers**

Add/Sub: S1

- 1) Natalie buys organic almonds priced at \$77 from the grocery store. How much did she pay the cashier, if she received \$23 in change?

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$$x - 77 = 23 ; \$100$$

- 2) Lara and Mae participated in a quiz contest. They scored 23 points in all. If Lara scored 9 points, how many points did Mae score?

---

$$x + 9 = 23 ; 14 \text{ points}$$

- 3) John was gifted a pack of crayons. He gave 13 crayons to his friend Rhea and was left with 11 crayons. How many crayons did the pack contain?

---

$$x - 13 = 11 ; 24 \text{ crayons}$$

- 4) Smith and his friends are gaming online on a popular website. An hour later, 6 friends go offline. Five of them continue playing. How many of them were gaming online initially?

---

$$x - 6 = 5 ; 11 \text{ persons}$$

- 5) Trevor takes up a test at school and completes it in an hour. The test has two sections. If he takes 35 minutes to complete the first section, how much time does he have left to complete the second section?

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$$x + 35 = 60 ; 25 \text{ minutes}$$

Name : \_\_\_\_\_

Score : \_\_\_\_\_

## One-Step Equations - Integers

Mul/Div: S1

- 1) Jamie paid the rent well past the due date for the months of April, May and June. As a result, he had been charged a total of \$75 as late fee. How much did he pay as late fee per month?

\_\_\_\_\_

- 2) The kindergarten section of Lehigh Valley has 12 classrooms. If each classroom can accommodate 15 kids, how many kids can the kindergarten section accommodate in all?

\_\_\_\_\_

- 3) Juan sells raffle tickets at a charity event for \$6 each. How many tickets does he have to sell to make \$114?

\_\_\_\_\_

- 4) Melanie works as a nanny and is paid \$14 per hour. If she puts in 40 hours of work in 7 days, how much does she earn in a week?

\_\_\_\_\_

- 5) The non-fiction section of the Montgomery County Library has 17 racks. If each rack holds 528 books, what is the total collection of non-fiction books in the library?

\_\_\_\_\_

**Answer key****One-Step Equations - Integers**

Mul/Div: S1

- 1) Jamie paid the rent well past the due date for the months of April, May and June. As a result, he had been charged a total of \$75 as late fee. How much did he pay as late fee per month?

$$\underline{3x = 75 ; \$25}$$

- 2) The kindergarten section of Lehigh Valley has 12 classrooms. If each classroom can accommodate 15 kids, how many kids can the kindergarten section accommodate in all?

$$\underline{\frac{x}{12} = 15 ; 180 \text{ kids}}$$

- 3) Juan sells raffle tickets at a charity event for \$6 each. How many tickets does he have to sell to make \$114?

$$\underline{6x = 114 ; 19 \text{ tickets}}$$

- 4) Melanie works as a nanny and is paid \$14 per hour. If she puts in 40 hours of work in 7 days, how much does she earn in a week?

$$\underline{\frac{x}{14} = 40 ; \$560}$$

- 5) The non-fiction section of the Montgomery County Library has 17 racks. If each rack holds 528 books, what is the total collection of non-fiction books in the library?

$$\underline{\frac{x}{17} = 528 ; 8976 \text{ books}}$$