

Solve the Equations

1. $28 = 18 + x - 20$

2. $4c + 9c - 7c = 48$

3. $4m + 3m = 33 - 12$

4. The product of 9 and a number minus the product of 6 and the same number is 36. What is the number?

5. Billy went to the library and had a certain number of books in his bookbag. He added 4 to his bag but returned 6 to the library. If he now has 10 books in his bookbag, how many did he start with?

6. In a bag of peanuts there are 35 almonds, 34 hazelnuts, 32 walnuts, and p pistachios. The bag has a total of 134 nuts. WRITE and solve an equation to find how many pistachios are in the bag.

7. The equation $x + 8 = 9$ shows an operation. What is the inverse of that operation?
- A. The inverse operation is addition.
 - B. The inverse operation is subtraction.

8. Complete the sentence.

Subtracting 24 is the inverse of _____.

9. Each equation shows an operation. Check all the equations that have multiplication as the inverse operation.

A. $g \cdot 17 = 204$

C. $n + 15 = 78$

B. $80 = x \div 5$

D. $m \div 7 = 9$

10. Complete the sentence.

Dividing by 12 is the inverse of _____.

11. **Reasoning** For the equation $z \div 3 = 8$, what must be true about the value of z ? Check all that apply.

A. The value of z must have 3 and 8 as factors.

C. The value of z is $8 + 3$.

D. The value of z is $8 - 3$.

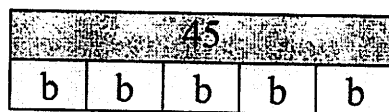
B. The value of z must have 3 and 8 as multiples.

E. The value of z is $8 \cdot 3$.

F. The value of z is $8 \div 3$.

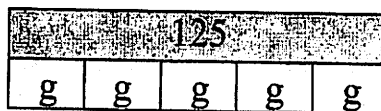
12. **Challenge** A teacher evenly shares 45 berries and 125 grapes among 5 students. They use the bar diagrams to model the equations. Let b be the number of berries and g be the number of grapes for each student.

Berries



$5b = 45$

Grapes



$5g = 125$

Part A: How many berries does each student get? _____

Part B: How many grapes does each student get? _____

Part C: How many pieces of fruit does each student get? _____

Solve the Equations

1. $28 = 18 + x - 20$	2. $4c + 9c - 7c = 48$	3. $4m + 3m = 33 - 12$
$28 = x - 2$ $+2 \quad +2$	$6c = 48$ $\div 6 \quad \div 6$	$7m = 21$ $\div 7 \quad \div 7$
$30 = x$	$c = 8$	$m = 3$

4. The product of 9 and a number minus the product of 6 and the same number is 36. What is the number?

$$9n - 6n = 36$$

$$3n = 36$$

$$\div 3 \quad \div 3$$

$$n = 12$$

5. Billy went to the library and had a certain number of books in his bookbag. He added 4 to his bag but returned 6 to the library. If he now has 10 books in his bookbag, how many did he start with?

$$b + 4 - 6 = 10$$

$$b - 2 = 10$$

$$+2 \quad +2$$

$$b = 12 \text{ books}$$

6. In a bag of peanuts there are 35 almonds, 34 hazelnuts, 32 walnuts, and p pistachios. The bag has a total of 134 nuts. WRITE and solve an equation to find how many pistachios are in the bag.

$$35 + 34 + 32 + p = 134$$

$$101 + p = 134$$

$$-101 \quad -101$$

$$p = 33 \text{ pistachios}$$

7. The equation $x + 8 = 9$ shows an operation. What is the inverse of that operation?
- A. The inverse operation is addition.
 - B. The inverse operation is subtraction.

8. Complete the sentence.

Subtracting 24 is the inverse of Adding 24.

9. Each equation shows an operation. Check all the equations that have multiplication as the inverse operation.

A. $g \cdot 17 = 204$

C. $n + 15 = 78$

B. $80 = x \div 5$

D. $m \div 7 = 9$

10. Complete the sentence.

Dividing by 12 is the inverse of Multiplying by 12.

11. Reasoning For the equation $z \div 3 = 8$, what must be true about the value of z ? Check all that apply.

A. The value of z must have 3 and 8 as factors.

C. The value of z is $8 + 3$.

B. The value of z must have 3 and 8 as multiples.

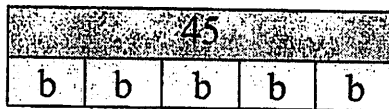
D. The value of z is $8 - 3$.

E. The value of z is $8 \cdot 3$.

F. The value of z is $8 \div 3$.

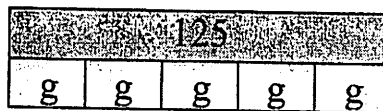
12. Challenge A teacher evenly shares 45 berries and 125 grapes among 5 students. They use the bar diagrams to model the equations. Let b be the number of berries and g be the number of grapes for each student.

Berries



$$\begin{array}{r} 5b = 45 \\ \div 5 \quad \div 5 \\ \hline b = 9 \end{array}$$

Grapes



$$\begin{array}{r} 5g = 125 \\ \div 5 \quad \div 5 \\ \hline g = 25 \end{array}$$

Part A: How many berries does each student get? ~~9~~ 9

Part B: How many grapes does each student get? 25

Part C: How many pieces of fruit does each student get? 34