

Boost Free Lessons - Year 8 Maths

Lesson 8: One Step Equations

Name: _____ Grade: _____ Date: _____

Worked Example 1

Solve $6x = 42$

1. x is being multiplied by 6, so do the opposite and divide both sides by 6.
2. $42 \div 6 = 7$.
3. Check by substituting back: $6 \times 7 = 42$ (correct).

$x = 7$

Worked Example 2

Solve $\frac{m}{5} = 9$

1. m is being divided by 5, so do the opposite and multiply both sides by 5.
2. $9 \times 5 = 45$.
3. Check by substituting back: $45 \div 5 = 9$ (correct).

$m = 45$

Remember: Do the **opposite** operation, and do it to **both** sides. The opposite of $\times$ is $\div$, and the opposite of $+$ is $-$. Always substitute your answer back to check.



Question 1: Solve the following equations.

1. $4x = 20$

2. $y + 9 = 16$

3. $m - 8 = 3$

4. $7k = 63$

5. $\frac{a}{3} = 6$

6. $5p = -35$

7. $\frac{t}{4} = 9$

8. $w + 14 = 6$

9. $9n = 0$

10. $\frac{c}{6} = -2$



Question 2: Solve the following equations.

1. $12x = 8$

2. $3y = -27$

3. $\frac{m}{2} = 7.5$

4. $-4k = 20$

5. $8 = 2a$

6. $100 = 25b$

7. $-6t = -42$

8. $\frac{w}{10} = 0.3$



Question 3: Answer the following questions.

1. Five identical books cost \$60 in total. Write an equation and find the cost of one book.
2. A number divided by 7 gives 8. Write an equation and find the number.
3. A rectangle has an area of 48 cm^2 and a width of 6 cm. Write an equation and find its length.
4. Three times a number is -21 . Write an equation and find the number.
5. A class is split into 4 equal groups of 7 students. Write an equation and find the class size.





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Answers: One Step Equations**Question 1**

1. $x = 5$

2. $y = 7$

3. $m = 11$

4. $k = 9$

5. $a = 18$

6. $p = -7$

7. $t = 36$

8. $w = -8$

9. $n = 0$

10. $c = -12$

Question 2

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

2. $y = -9$

3. $m = 15$

4. $k = -5$

5. $a = 4$

6. $b = 4$

7. $t = 7$

8. $w = 3$

Question 3

1. $5b = 60$, so $b = \$12$

2. $\frac{n}{7} = 8$, so $n = 56$

3. $6L = 48$, so $L = 8$ cm

4. $3n = -21$, so $n = -7$

5. $\frac{c}{4} = 7$, so $c = 28$ students

