

Chapter 2 Review

Solve each equation. There are 3 possible outcomes:

One Solution	Infinitely Many Solutions (IMS)	No Solution
$x = 3$	$5 = 5$	$5 = 4$

1. $m - 9 = 11$
 $\begin{array}{r} m - 9 = 11 \\ +9 \quad +9 \\ \hline m = 20 \end{array}$

2. $\frac{7}{12}x = \frac{3}{14}$
 $\begin{array}{r} \frac{7}{12}x = \frac{3}{14} \\ \frac{12}{7} \cdot \frac{7}{12}x = \frac{3}{14} \cdot \frac{12}{7} \\ x = \frac{18}{49} \end{array}$

3. $n - 8.5 = 14.2$
 $\begin{array}{r} n - 8.5 = 14.2 \\ +8.5 \quad +8.5 \\ \hline n = 22.7 \end{array}$

4. $8p - 3 = 13$
 $\begin{array}{r} 8p - 3 = 13 \\ +3 \quad +3 \\ \hline 8p = 16 \\ p = 2 \end{array}$

5. $3r - 8 = -32$
 $\begin{array}{r} 3r - 8 = -32 \\ +8 \quad +8 \\ \hline 3r = -24 \\ r = -8 \end{array}$

6. $8j - 5 + j = 67$
 $\begin{array}{r} 8j - 5 + j = 67 \\ +5 \quad +5 \\ \hline 9j = 72 \\ j = 8 \end{array}$

7. $7h + 2h - 3 = 15$
 $\begin{array}{r} 9h - 3 = 15 \\ +3 \quad +3 \\ \hline 9h = 18 \\ h = 2 \end{array}$

8. $6(t + 5) = -36$
 $\begin{array}{r} 6t + 30 = -36 \\ -30 \quad -30 \\ \hline 6t = -66 \\ t = -11 \end{array}$

9. $\frac{1}{2}(s + 5) = 7.5$
 $\begin{array}{r} \frac{1}{2}(s + 5) = 7.5 \\ \cdot 2 \quad \cdot 2 \\ \hline s + 5 = 15 \\ -5 \quad -5 \\ \hline s = 10 \end{array}$

10. $8g - 10g = 4$
 $\begin{array}{r} 8g - 10g = 4 \\ -2g = 4 \\ \cdot (-1) \quad \cdot (-1) \\ \hline 2g = -4 \\ g = -2 \end{array}$

11. $-3(5 - t) = 18$
 $\begin{array}{r} -15 + 3t = 18 \\ +15 \quad +15 \\ \hline 3t = 33 \\ t = 11 \end{array}$

12. $3(c - 4) = -9$
 $\begin{array}{r} 3c - 12 = -9 \\ +12 \quad +12 \\ \hline 3c = 3 \\ c = 1 \end{array}$

13. $4h + 5 = 9h$
 $\begin{array}{r} 4h + 5 = 9h \\ -4h \quad -4h \\ \hline 5 = 5h \\ 1 = h \end{array}$

14. $7t = 80 + 9t$
 $\begin{array}{r} 7t = 80 + 9t \\ -9t \quad -9t \\ \hline -2t = 80 \\ t = 40 \end{array}$

15. $2(3x - 6) = 3(2x - 4)$
 $\begin{array}{r} 6x - 12 = 6x - 12 \\ -6x \quad -6x \\ \hline -12 = -12 \end{array}$ I.M.S.

16. $m + 3m = 4$
 $\begin{array}{r} 4m = 4 \\ \cdot \frac{1}{4} \quad \cdot \frac{1}{4} \\ \hline m = 1 \end{array}$

17. $-b + 4b = 8b - b$
 $\begin{array}{r} 3b = 7b \\ -3b \quad -3b \\ \hline 0 = 4b \\ 0 = b \end{array}$

18. $6p + 1 = 3(2p + 1)$
 $\begin{array}{r} 6p + 1 = 6p + 3 \\ -6p \quad -6p \\ \hline 1 = 3 \end{array}$ No Sol.

19. $10z - 5 + 3z = 8 - z$
 $\begin{array}{r} 13z - 5 = 8 - z \\ +z \quad +z \\ \hline 14z - 5 = 8 \\ +5 \quad +5 \\ \hline 14z = 13 \\ z = \frac{13}{14} \end{array}$

20. $3(g - 1) + 7 = 3g + 4$
 $\begin{array}{r} 3g - 3 + 7 = 3g + 4 \\ 3g + 4 = 3g + 4 \\ -3g \quad -3g \\ \hline 4 = 4 \end{array}$ I.M.S.

21. $17 - 20q = (-13 - 5q)4$
 $\begin{array}{r} 17 - 20q = -52 - 20q \\ +20q \quad +20q \\ \hline 17 = -52 \end{array}$ No Sol.

Write an equation to model each situation. Then solve.

22. A DVD club charges a monthly membership fee of \$4.95 and \$11.95 for each DVD purchased. If a customer's bill for the month was \$64.70, how many DVDs did the customer purchase?

<p>a. Define your variable. (1 point)</p> <p>$x = \text{dvd's}$</p>	<p>b. Write an equation. (1 point)</p> $4.95 + 11.95x = 64.70$ $\begin{array}{r} -4.95 \\ \hline 11.95x = 59.75 \\ x = \end{array}$	<p>c. Solve the equation. (2 points)</p> <p>$x = 5 \text{ dvd's}$</p>
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23. A lawyer charges \$100 to be put on retainer for a client. The lawyer also charges an hourly rate of \$75 for work done. How many hours does the lawyer have to work for a client to charge \$625?

<p>a. Define your variable. (1 point)</p> <p>$x = \text{hours}$</p>	<p>b. Write an equation. (1 point)</p> $100 + 75x = 625$ $\begin{array}{r} -100 \\ \hline 75x = 525 \\ x = \end{array}$	<p>c. Solve the equation. (2 points)</p> <p>$x = 7 \text{ hours}$</p>
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24. A rectangular pool is twice as long as it is wide. What are the dimensions of pool if perimeter is 42 yd?

<p>a. Define your variable. (1 point)</p> <p>$l = \text{length}$ $w = \text{width}$ $l = 2w$</p>	<p>b. Write an equation. (1 point)</p> $2(l + w) = 42 \text{ yd}$ $2(2w + w) = 42 \text{ yd}$ $\begin{array}{r} 2(3w) = 42 \text{ yd} \\ 6w = 42 \text{ yd} \end{array}$	<p>c. Solve the equation. (2 points)</p> <p>$w = 7 \text{ yards}$ $l = 14 \text{ yards}$</p>
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25. Two friends rent an apartment together. They agree that one person will pay 1.5 times what the other person pays. If the rent is \$850, how much will each friend pay?

<p>a. Define your variable. (1 point)</p> <p>$x = \text{rent}$</p>	<p>b. Write an equation. (1 point)</p> $x + 1.5x = 850$ $2.5x = 850$ $x =$	<p>c. Solve the equation. (2 points)</p> <p>① $x = 340$ ② 510</p>
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26. A shopper's discount club charges a monthly fee of \$15 and sells gasoline for \$2.05 per gallon. The gas station across the street sells gasoline for \$2.35 per gallon and charges no fee. How many gallons of gasoline would you have to buy in one month to spend the same amount at either store?

<p>a. Define your variable. (1 point)</p> <p>$x = \text{gallons}$</p>	<p>b. Write an equation. (1 point)</p> $15 + 2.05x = 2.35x$ <p>COMPARE</p>	<p>c. Solve the equation. (2 points)</p> $15 = .3x$ $50 \text{ g.} = x$
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27. Michael and Kevin are running. Kevin gets a 3-mile head start and runs at a rate of 5.5 mi/h. Michael runs at a rate of 7 mi/h. How many hours will it take Michael to catch up with Kevin?

<p>a. Define your variable. (1 point)</p> <p>$x = \text{hours}$</p>	<p>b. Write an equation. (1 point)</p> $3 + 5.5x = 7x$ <p>COMPARE</p>	<p>c. Solve the equation. (2 points)</p> $\frac{3}{1.5} = \frac{1.5x}{1.5}$ $2 \text{ hrs} = x$
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