

Name: _____

Period: _____ Date: _____

Solving Absolute Value Equations – Two Steps **Answers**

Section I. Solve for the variable if possible

1. $|2x - 8| = 10$

$x = -1 \quad x = 9$

2. $|13 - y| = 21$

$y = -8 \quad y = 34$

3. $|4j + 3| = -11$

not possible (an absolute value cannot equal a negative)

4. $\left| \frac{w-17}{3} \right| = 7$

$w = -4 \quad w = 38$

5. $\left| \frac{d}{7} + 3 \right| = 8$

$d = -77 \quad d = 35$

6. $|3k + 9| = 27$

$k = -12 \quad k = 6$

7. $\left| \frac{g}{5} + 10 \right| = 4$

$g = -70 \quad g = -30$

8. $\left| \frac{7+a}{6} \right| = 8$

$a = -55 \quad a = 41$

9. $\left| \frac{b}{-9} + 8 \right| = 15$

$b = -63 \quad b = 207$

10. $|2(7 - f)| = 10$

$f = 2 \quad f = 12$

11. $|2m - 8| = 14$

$m = -3 \quad m = 11$

12. $|-4h + 24| = 16$

$h = 2 \quad h = 10$

13. $3|2j - 8| = 12$

$j = 2 \quad j = 6$

14. $|2q| - 5 = 17$

$q = -11 \quad q = 11$

15. $-9|g - 12| = -63$

$g = 5 \quad g = 19$

16. $-6|y + 22| = 63$

not possible (an absolute value cannot equal a negative)

17. $|m - 14| + 17 = 35$

$m = -4 \quad m = 32$

18. $|3a + 12| - 5 = -2$

$a = -5 \quad a = -3$

19. $|4d + 20| = 28$

$d = -12 \quad d = 2$

20. $\frac{|8p|}{2} - 32 = -40$

not possible (an absolute value cannot equal a negative)

21. $\frac{1}{2}|x + 18| = 26$

$x = -70 \quad x = 34$

22. $-5\left|\frac{m}{4}\right| - 15 = 35$

not possible (an absolute value cannot equal a negative)

23. $8\left|\frac{y}{3}\right| - 20 = -56$

not possible (an absolute value cannot equal a negative)

24. $-6|x + 14| = -42$

$x = -21 \quad x = -7$