Algebra 1 2.5

Evaluate absolute value expressions
Solve absolute value equations

distance
absolute value

Can't be neg.

whiteboards

Evaluate each expression if $f = 3$, $g = -4$, and $h = 5$.

1. $|(3 - 5)| + 13$

$|-2| + 13$

$\downarrow$

$2 + 13$

15

2. $16 - |g + 9|$

$16 - |\ 5\ |$

$\downarrow$

$16 - 5$

11

Solve each equation. Then graph the solution set.

4. $|n + 7| = 5$

$n + 7 = -5$

$-7 \quad -7$

$n = -12$

$n + 7 = 5$

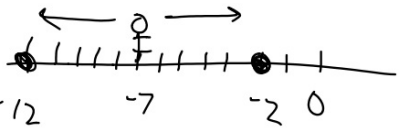
$-7 \quad -7$

$n = -2$

$\frac{-12+-2}{2}$

$\frac{-14}{2}$

$= -7$



5. $|3z - 3| = 9$

12 ± 3

10. FINANCIAL LITERACY For a company to invest in a product, they must believe they will receive a 12% return on investment (ROI) plus or minus 3%. Write an equation to find the least and the greatest ROI they believe they will receive.

$$|n - 12| = 3$$

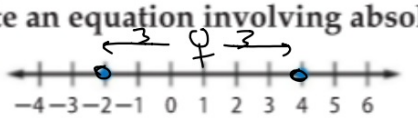
$n - 12 = -3$
$+12 \quad +12$
$n = 9$

$n - 12 = 3$
$+12 \quad +12$
$n = 15$

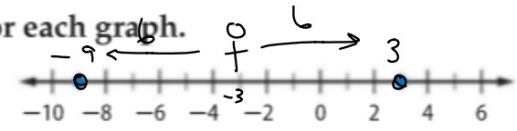
$\frac{-2+4}{2} = \frac{2}{2} = 1$ $\frac{-9+3}{2} = \frac{-6}{2}$

Write an equation involving absolute value for each graph.

11



12.



$|x-1| = 3$ $|x-3| = 6$

$|x+3| = 6$

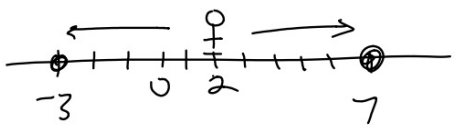
$|4t-8| = 20$

$4t-8 = -20$

$+8 \quad +8$

$\frac{4t}{4} = \frac{-12}{4}$

$t = -3$



$\frac{-3+7}{2}$

$4t-8 = 20$

$+8 \quad +8$

$\frac{4t}{4} = \frac{28}{4}$

$t = 7$

Solve each equation. Then graph the solution set.

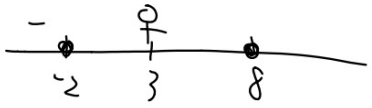
22. $|n - 3| = 5$ **23.** $|f + 10| = 1$

25. $|4t - 8| = 20$ **26.** $|8w + 5| = 21$

22.

$n - 3 = -5$
$+3 \quad +3$
$n = -2$

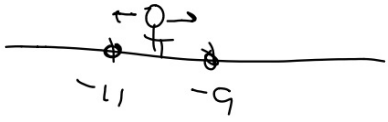
$n - 3 = 5$
$+3 \quad +3$
$n = 8$



23.

$f + 10 = 1$
$-10 \quad -10$
$f = -9$

$f + 10 = -1$
$-10 \quad -10$
$f = -11$



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