

**ABSOLUTE VALUE EQUATIONS WORKSHEET****Solve each equation.**

1.  $|-6m| = 30$

2.  $|-4 + 5x| = 16$

3.  $|-2r - 1| = 11$

4.  $3|-8x| + 8 = 80$

5.  $-5|3 + 4k| = -115$

6.  $3 - |8y - 6| = 3$

7.  $6|1 - 5x| - 9 = 57$

8.  $2 - 5|5m - 5| = -73$

9.  $5|9 - 5n| - 7 = 38$

10.  $|4z + 6| + 9 = 3$

11.  $|3w + 2| = 4w + 5$

12. A machine fills Quaker Oatmeal containers with 32 ounces of oatmeal. After the containers are filled, another machine weighs them. If the container's weight differs from the desired 32 ounce weight by more than 0.5 ounces, the container is rejected. Write an equation that can be used to find the heaviest and lightest acceptable weights for the Quaker Oatmeal container. Solve the equation.

13. In the Hundred Years' War, Henry V defeated a French army in the battle of Agincourt and Joan of Arc defeated an English army in the battle of Orleans. Suppose you know only that these two famous battles were 14 years apart and that the battle of Agincourt occurred in 1415. Use an absolute value equation to find the possibilities for the year in which the battle of Orleans occurred.

14. Research at a major university has shown that identical twins generally differ by less than 6 pounds in body weight. If Kim weighs 127 pounds, then in what range is the weight of her identical twin sister Kathy?