

Writing Equations and Inequalities WS#1

For each problem, write an equation or inequality (as indicated) to represent the situation.

1) Micah is collecting shells on the beach. He has already collected 10 shells and is collecting more at a rate of two shells per minute. Write an equation that represents this situation, where y is the total number of shells collected after x minutes.

Equation: $y = 10 + 2x$
or $y = 2x + 10$

3) Forrest Gump is running across the country. He has already run 2,500 miles and is running at a rate of 30 miles per day. Write an equation that represents this situation, where y is the total distance Forrest has run after x days.

Equation: $y = 2500 + 30x$
or $y = 30x + 2500$

5) Jimster loves music and has a playlist of 780 songs. He is getting sick of listening to the same songs so he removes 4 from his playlist each day. He wants to keep at least y songs on his playlist. Write an inequality that represents the situation, where x is the number of days.

Inequality: $y \leq 780 - 4x$
or $y \leq -4x + 780$

7) Captain Nemo's submarine Nautilus is at a depth of 20,000 leagues under the sea and is rising toward the surface at a rate of 200 leagues per minute. Nemo wants to rise to a level of no more than y leagues below sea level. Write an inequality that represents this situation, where x is the number of minutes.

Inequality: $y \geq -20000 + 200x$
or $y \geq 200x - 20,000$

2) Iron Man is taking off from deep within the Marianas Trench and headed toward outer space. He starts out 20,000 feet below sea level and is moving upward at a rate of 48 feet per second. Write an equation that represents this situation, where y is Iron Man's position relative to sea level after x seconds.

Equation: $y = -20,000 + 48x$
or $y = 48x - 20,000$

4) Kelda has \$500 in savings, but is withdrawing \$25 per week to buy carryout food. Write an equation that represents this situation, where y is the amount of money Kelda has in savings after x weeks.

Equation: $y = 500 - 25x$
or $y = -25x + 500$

6) Megan is climbing Denali, the tallest mountain in North America with the summit at 20,310 feet above sea level. She is currently at an elevation of 12,500 feet and is climbing at a rate of 5 feet per minute. She will climb to at most an elevation of 20,310 feet (the top of the mountain). Write an inequality that represents this situation, where x is the number of minutes.

Inequality: $y \leq 12500 + 5x$
or $y \leq 5x + 12500$

8) Daniel is going to the fair. The admission to the fair is \$3 and the rides cost \$1.50 each. Daniel can spend no more than y dollars. Write an inequality that represents this situation, where x is the number of rides Daniel goes on.

Inequality: $y \geq 3 + 1.5x$
or $y \geq 1.5x + 3$