

1) Sketch and label the following functions on the same graph.

$$y = x^2$$

$$y = x^2 + 4$$

$$y = (x + 3)^2$$

$$y = (x + 5)^2 - 4$$

$$y = (x - 2) + 5$$

2) Sketch and label the function. $y = \begin{cases} 3 & x < 0 \\ x & 0 \leq x < 2 \\ x^2 - 2 & 2 \leq x \end{cases}$

3) What is the slope of the line through the points (5, -2) and (7, 9) ?

4) What is the equation of the line through the points (1, -2) (5, 7) ?

5) What is the slope of the line $3x + 7y = 19$?

6) What is the equation of the line through the point (2,8) parallel to the line $y = -2x + 7$?

7) What is the equation of the line through the point (-3, 5) perpendicular to the line $5x + 6y = 11$?

8) The IRS allows "straight line depreciation" for certain things when filing taxes and computing business expenses. The value V of a new car is \$24,000, and the value is zero in 7 years. Write an equation in which the value V of the car is a function of time T in years past the purchase year.

9) Find the equation of the line through the points (2.34, -5.92) (16.1, 2.13).

10) Find the equation of the line through the points (49, 701) (65, 957).