

Max/Min Worksheet

Find the maximum or minimum value of the function

① $f(x) = 5x^2 + 20x - 5$

② $f(x) = -11x^2 + 44x - 3$

③ $f(x) = -x^2 + 12x - 1$

④ $y - 7 = -3(x + 7)^2$

⑤ $y + 10 = -4(x - 23)^2$

⑥ $y - 10 = 21(x - 7)^2$

⑦ $y = -(x + 7)^2 - 37$

Hint: get into
 $y - k = a(x - h)^2$ form.

Solve (use t substitution)

⑧ $(x + 4)^2 + 3(x + 4) - 28 = 0$

⑨ $x^4 + 3x^2 - 28 = 0$

Determine the nature of the roots (using $b^2 - 4ac$)

⑩ $x^2 + 7x + 8 = 0$

⑪ $3x^2 + 2x + 8 = 0$

⑫ $4x^2 - 4x + 1 = 0$