

4. Graphs of Functions

Graph the linear function.

1) $f(x) = 3x + 6$

1) _____

Sketch the graph of the basic function. Label at least three points.

2) $f(x) = x^2$

2) _____

3) $f(x) = x^3$

3) _____

4) $f(x) = \sqrt{x}$

4) _____

5) $f(x) = |x|$

5) _____

Graph the function by transformations.

6) $G(x) = -2|x - 5| + 4$

6) _____

Explain how to obtain the graph of the given quadratic function from the basic graph of $y = x^2$.

7) $f(x) = x^2 + 2$

7) _____

8) $f(x) = (x + 4)^2$

8) _____

9) $f(x) = -3(x - 2)^2 + 8$

9) _____

Express the quadratic function in the form $f(x) = a(x - h)^2 + k$ and sketch the graph.

10) $f(x) = -x^2 - 4x + 5$

10) _____

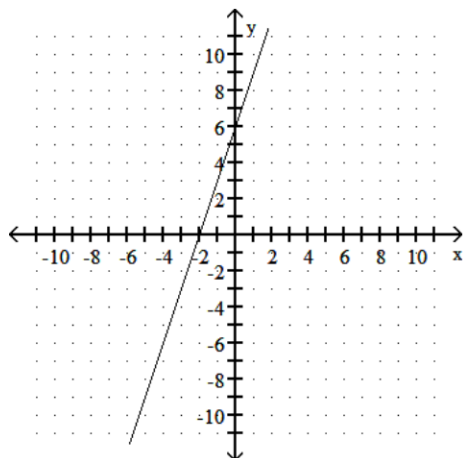
11) $f(x) = 4x^2 + 8x + 2$

11) _____

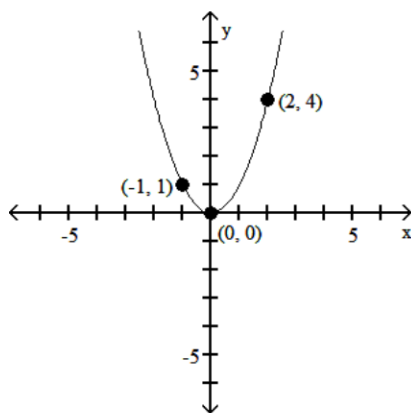
Answer Key

Testname: MATH 260S LAB HOUR (4. GRAPHS OF FUNCTIONS)

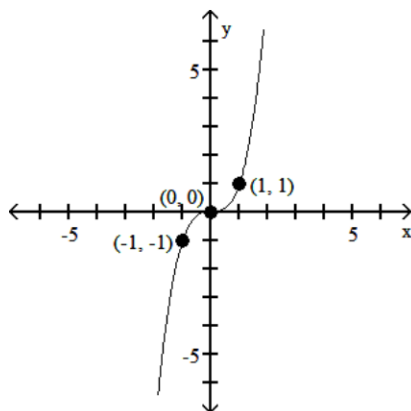
1)



2)



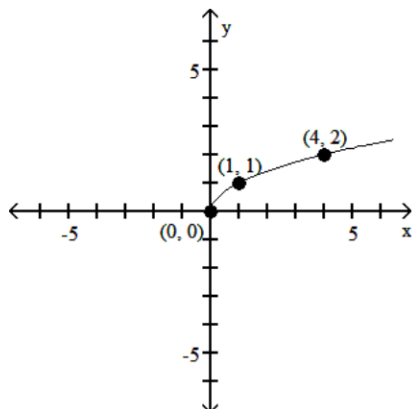
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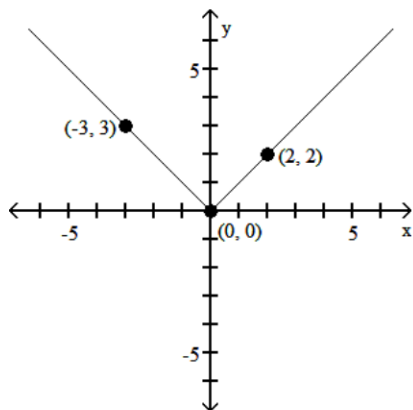
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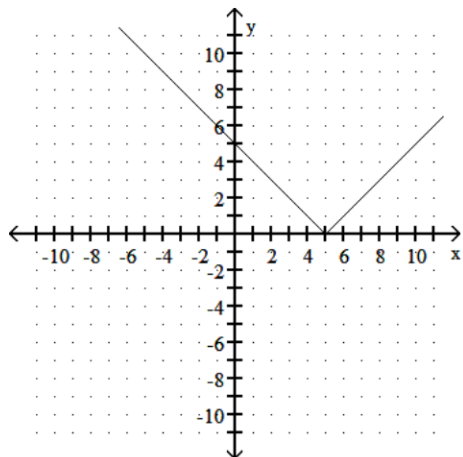
4)



5)



6)



7) Take the graph of $y = x^2$ and shift it 2 units up.

8) Take the graph of $y = x^2$ and shift it 4 units to the left.

9) Take the graph of $y = x^2$ and shift it 2 units to the left and 8 units up.

10) $f(x) = -(x + 4)^2 + 11$
vertex: $(-4, 11)$

11) $f(x) = 4(x + 1)^2 - 2$
vertex: $(-1, -2)$