SM3-A HW #1-10 (UNIT 1 Pre-Test Review #1))

Evaluate each function.

1) $f(x) = 3^x + 1$; Find $f(-2)$

2) $h(x) = -2 \cdot 5^x - 1$; Find $h(-2)$

Describe the transformation of the square function given by the following equation.

3) $y = 3(x + 1)^2 - 6$

a) Describe the transformation of the parent function

b) What is the range of the function?

4) $y = -3 - 2\sqrt{x + 4}$

5) What is the equation of a line that passes through: $(0, 5)$ and $(-3, 2)$

6) a) What is the vertex of the graph of the following function?
b) What is the range of the function?

$f(x) = -3|x - 2| + 4$

7) What is the inflection point of the following function?
$f(x) = -2\sqrt[3]{x + 3} - 4$

8) $g(x) = -(x - 2)^2 - 4$

a) Describe how g(x) is a transformation of $f(x) = x^2$

b) What is the range of the funciont?

9) What does it mean (as far as the x-y pairs are concerned) to say that the function has been vertically stretched by a factor of 2?

10) a) Explain what transformations have been applied to the parent function.
(b) Where is the inflection point?

$y = \sqrt[3]{x + 1} - 8$

11) a) Explain what transformations have been applied to the parent function.
(b) Where is the inflection point?
$y = -2 + \sqrt[3]{x - 4}$

12) What is the inflection point of the graph given by:
$y = 4(x - 3)^3 + 5$

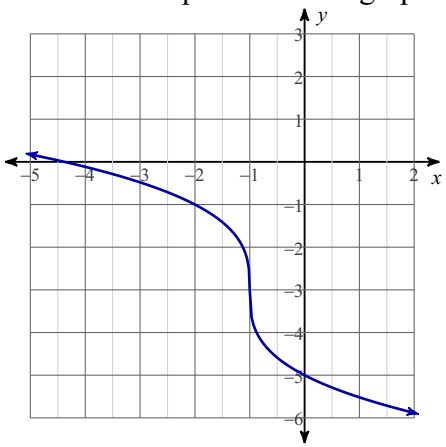
13) What is the range of the function?
$y = -3|x - 5| - 7$

14) Which of the following equations types have vertexes?
(a) $y = x$ (b) $y = x^2$ (c) $y = x^3$ (d) $y = \sqrt{x}$ (e) $y = \sqrt[3]{x}$ (f) $y = |x|$

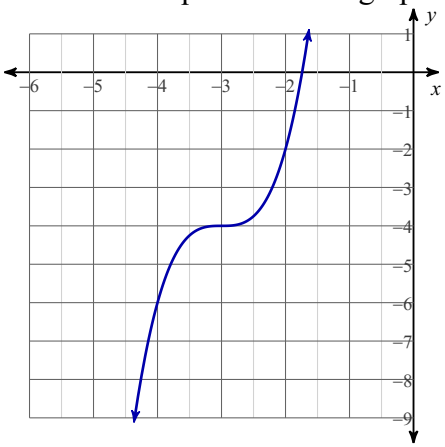
15) Which of the following equations types have inflection points?
(a) $y = x$ (b) $y = x^2$ (c) $y = x^3$ (d) $y = \sqrt{x}$ (e) $y = \sqrt[3]{x}$ (f) $y = |x|$

16) Which of the following equations types have either an absolute minimum or an absolute maximum?
(a) $y = x$ (b) $y = x^2$ (c) $y = x^3$ (d) $y = \sqrt{x}$ (e) $y = \sqrt[3]{x}$ (f) $y = |x|$

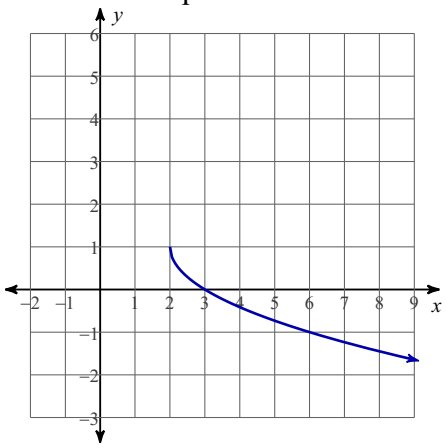
17) What is the equation of the graph?



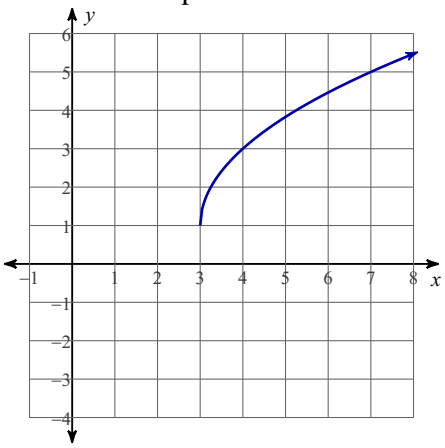
18) What is the equation of the graph?



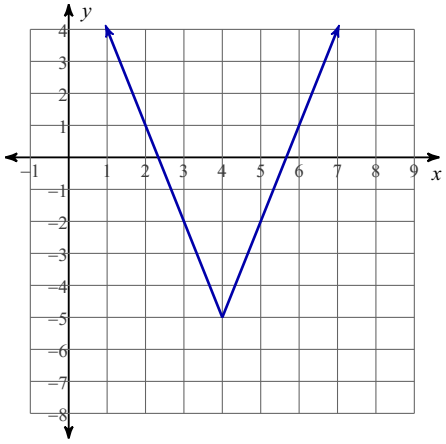
19) What is the equation?



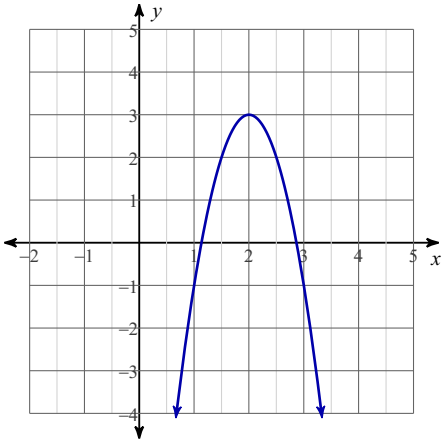
20) What is the equation?



21) What is the equation?



22) What is the equation?



23) List the 6 ways to show a relation between input and output.

24) What is the name of the following special point?

$f(0) = 5$