Worksheet: Graphs of Power Functions
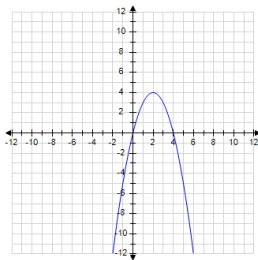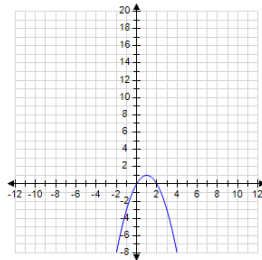
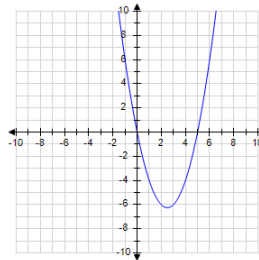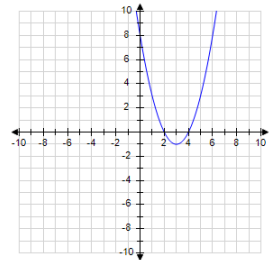1. Match the graphs (I) $\sim$ (IV) with the functions (A) $\sim$ (D).

(I) (II) (III) (IV)
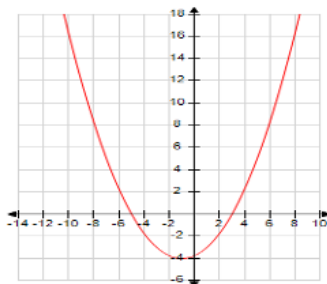
(A). $f(x) = -x^2+4x$ (B). $f(x) = x^2-5x$ (C). $f(x) = x^2-6x+8$ (D). $f(x) = -x^2+2x$

2. Find a quadratic function $f(x)$ whose graph is shown below.

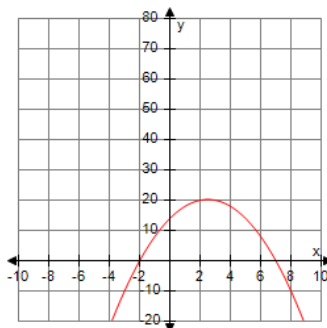A. $f(x) = \frac{1}{4}(x+1)^2 - 4$

B. $f(x) = -\frac{1}{4}(x+1)^2 - 4$

C. $f(x) = -(x+1)^2 - 4$

D. $f(x) = (x+1)^2 - 4$

E. $f(x) = 4(x+1)^2 - 4$

3. Find the equation that represents the function graphed below.
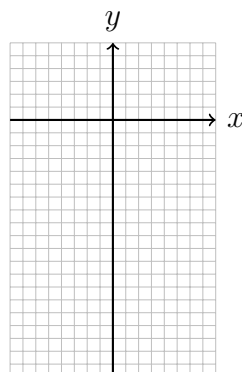
A. $f(x) = x^2 + 9x + 14$

B. $f(x) = -x^2 + 5x + 14$

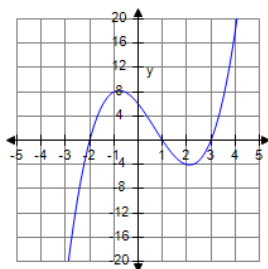C. $f(x) = -x^2 - x - 5$

D. $f(x) = -x^2 - 2x + 7$

E. $f(x) = x^2 - 5x + 14$

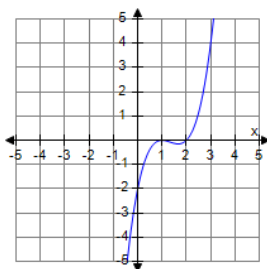4. Graph $f(x) = -3x^2 - 4x - 7$
   on the given coordinates

y

x

5. Match the graphs (I) $\sim$ (IV) with the functions (A) $\sim$ (D).
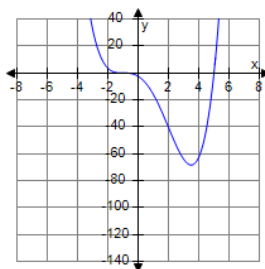
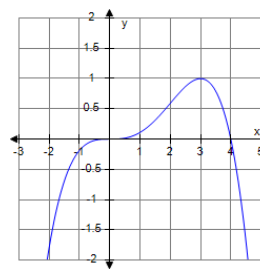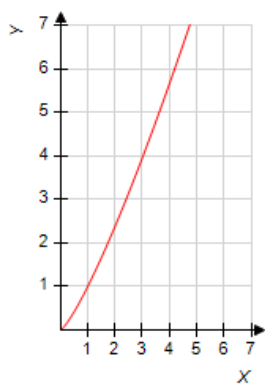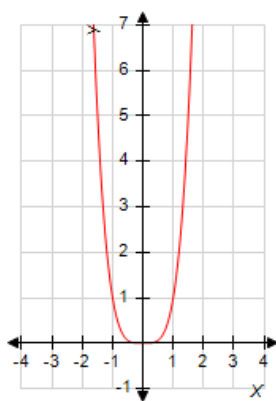(I)   (II)   (III)   (IV)

(A). $f(x) = (x-1)(x+2)(x-3)$ (B). $f(x) = \frac{1}{2}(x+1)^3(x-5)$ (C). $f(x) = -\frac{1}{27}x^4 + \frac{4}{27}x^3$
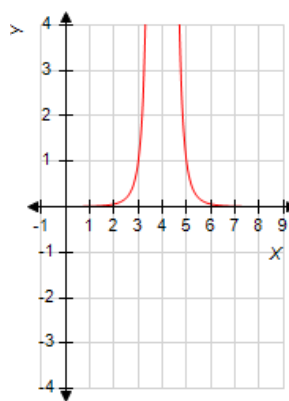(D). $f(x) = (x-1)^2(x-2)$

6. Which one of the following is the graph of $f(x) = \sqrt[5]{x^4}$
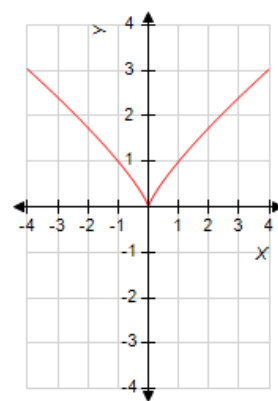

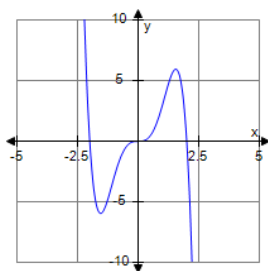(A)   (B)   (C)   (D)
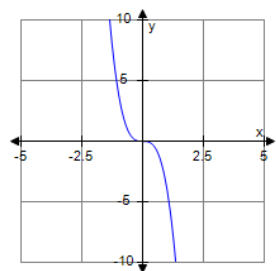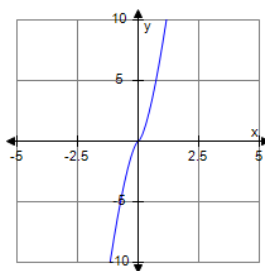
7. Which one of the following is the graph of $f(x) = x^5 - 4x^3$

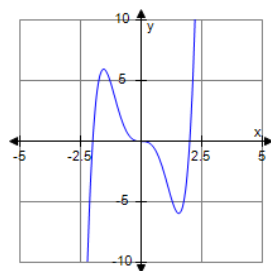(A)   (B)   (C)   (D)

8. Determine the end behavior of the graphs of the functions.

   (a) $y = 8x^3 - 7x^2 + 3x + 7$

   (b) $y = -4x^3 - 5x^2 + 9x + 9$