

Your Name:

ID #:

Solutions

Worksheet: Graphs of Power Functions

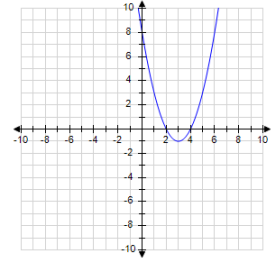
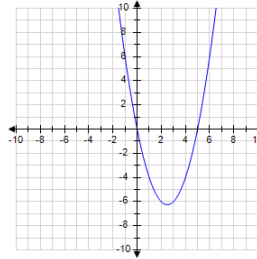
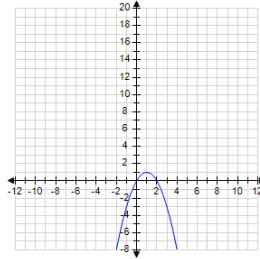
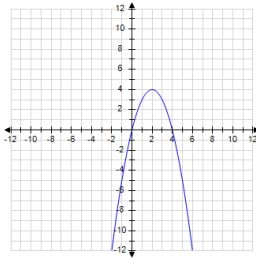
1. Match the graphs (I) ~ (IV) with the functions (A) ~ (D).

(I) **A**

(II) **D**

(III) **B**

(IV) **C**



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

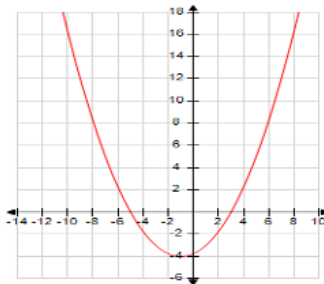
(B). $f(x) = x^2 - 5x$

(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.

$a(x-h)^2 + k$



opens up $\Rightarrow a > 0$

$h = -1$

$k = -4$

**passes (3, 0)
and (-5, 0)**

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

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

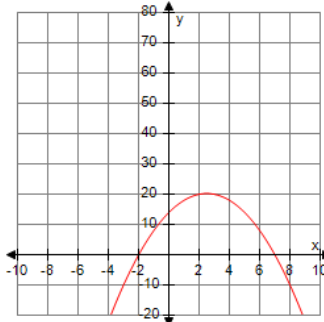
C. $f(x) = -(x+1)^2 - 4$

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.

$a(x-h)^2 + k$



opens down $\Rightarrow a < 0$

$x=0 \Rightarrow y \in (10, 20)$

passes (-2, 0)

A. $f(x) = x^2 + 9x + 14$

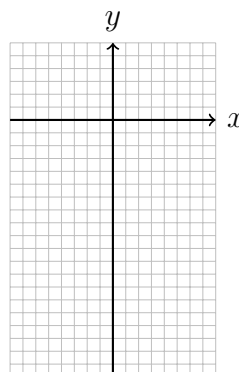
(B). $f(x) = -x^2 + 5x + 14 = -(x - \frac{5}{2})^2 + \frac{81}{4}$

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

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

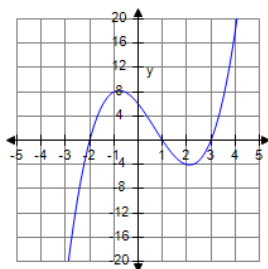
E. $f(x) = x^2 - 5x + 14$

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

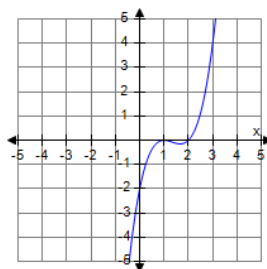


5. Match the graphs (I) ~ (IV) with the functions (A) ~ (D).

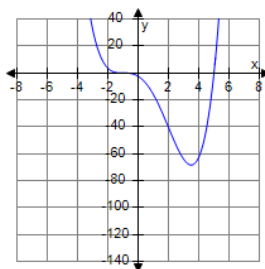
(I)



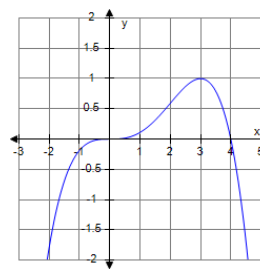
(II)



(III)

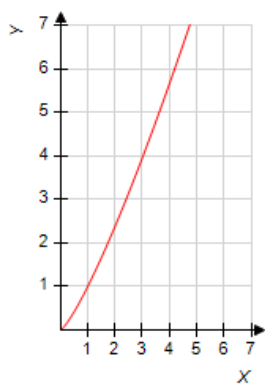


(IV)

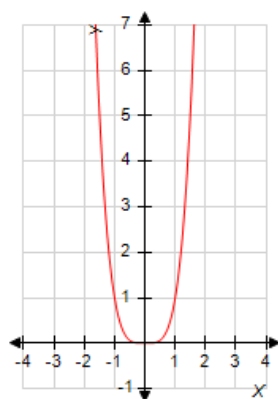


- (A). $f(x) = (x-1)(x+2)(x-3)$ (B). $f(x) = \frac{1}{2}(x+1)^3(x-5)$ (C). $f(x) = -\frac{1}{27}x^4 + \frac{4}{27}x^3$
 (D). $f(x) = (x-1)^2(x-2)$

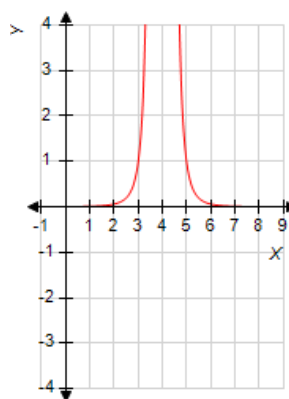
6. Which one of the following is the graph of $f(x) = \sqrt[5]{x^4}$



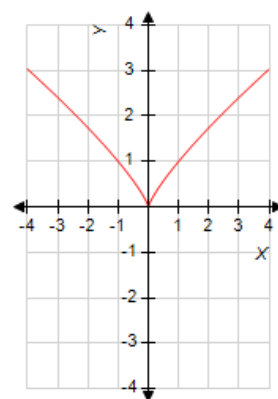
(A)



(B)

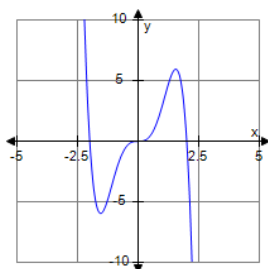


(C)

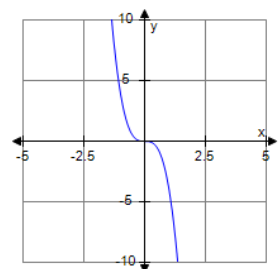


(D)

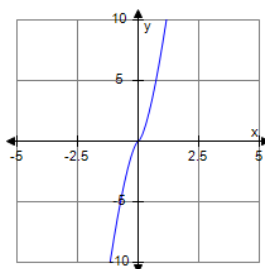
7. Which one of the following is the graph of $f(x) = x^5 - 4x^3$



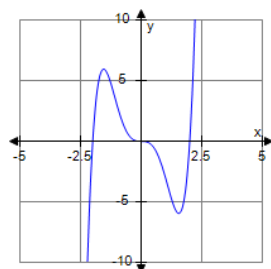
(A)



(B)



(C)



(D)

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

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

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