

Power functions

Name _____

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Date _____

Consider each power function. Determine the domain and range, intercepts, and end behavior.

1) $f(x) = 9x^6$

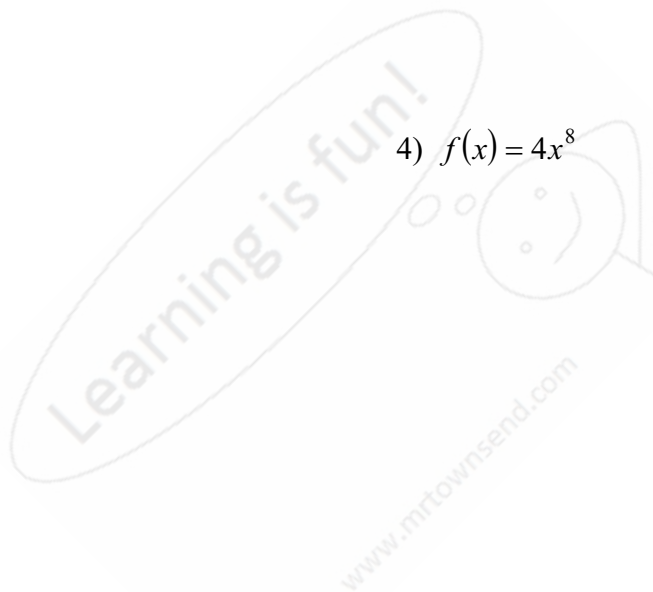
2) $f(x) = 5x^7$

3) $f(x) = \frac{1}{3}x^8$

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

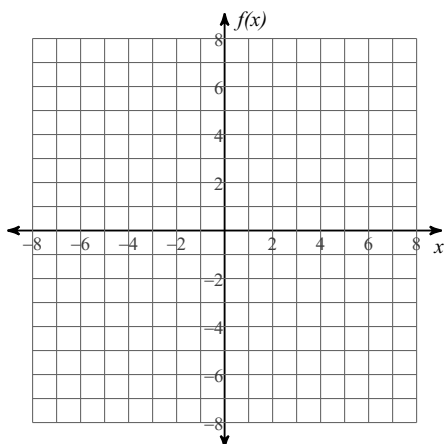
5) $f(x) = 3x^9$

6) $f(x) = \frac{1}{2}x^6$

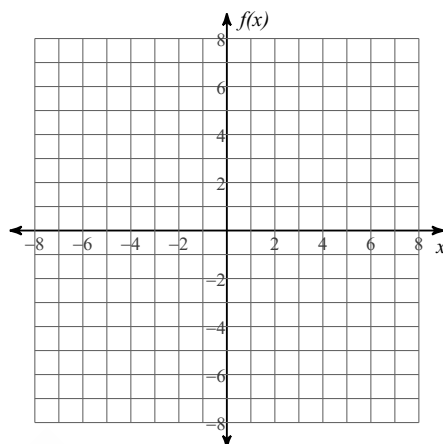


Sketch the graph of each power function.

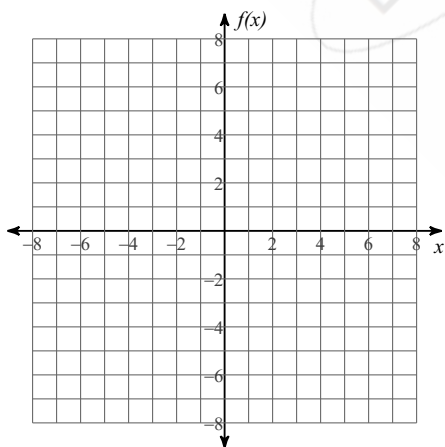
7) $f(x) = 7x^4$



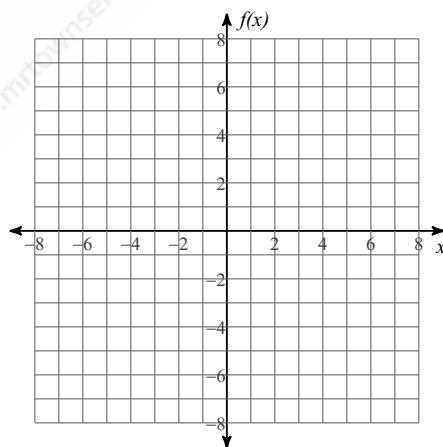
8) $f(x) = 3x^9$



9) $f(x) = 6x^2$



10) $f(x) = 9x^4$

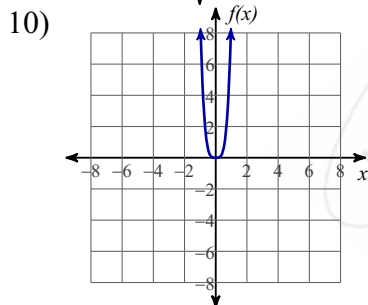
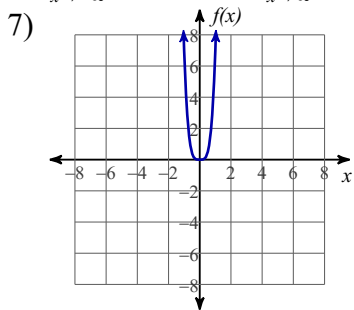


Answers to Power functions

1) Domain: $(-\infty, \infty)$
 Range: $[0, \infty)$
 x-intercept: 0 y-intercept: 0
 $\lim_{x \rightarrow -\infty} f(x) = \infty \quad \lim_{x \rightarrow \infty} f(x) = \infty$

3) Domain: $(-\infty, \infty)$
 Range: $[0, \infty)$
 x-intercept: 0 y-intercept: 0
 $\lim_{x \rightarrow -\infty} f(x) = \infty \quad \lim_{x \rightarrow \infty} f(x) = \infty$

5) Domain: $(-\infty, \infty)$
 Range: $(-\infty, \infty)$
 x-intercept: 0 y-intercept: 0
 $\lim_{x \rightarrow -\infty} f(x) = -\infty \quad \lim_{x \rightarrow \infty} f(x) = \infty$



2) Domain: $(-\infty, \infty)$
 Range: $(-\infty, \infty)$
 x-intercept: 0 y-intercept: 0
 $\lim_{x \rightarrow -\infty} f(x) = -\infty \quad \lim_{x \rightarrow \infty} f(x) = \infty$

4) Domain: $(-\infty, \infty)$
 Range: $[0, \infty)$
 x-intercept: 0 y-intercept: 0
 $\lim_{x \rightarrow -\infty} f(x) = \infty \quad \lim_{x \rightarrow \infty} f(x) = \infty$

6) Domain: $(-\infty, \infty)$
 Range: $[0, \infty)$
 x-intercept: 0 y-intercept: 0
 $\lim_{x \rightarrow -\infty} f(x) = \infty \quad \lim_{x \rightarrow \infty} f(x) = \infty$

