

Classroom Voting Questions: Precalculus

1.6 Powers, Polynomials, and Rational Functions

1. As $x \rightarrow \infty$, which function dominates? That is, which function is larger in the long run?

(a) $0.1x^2$

(b) $10^{10}x$

2. As $x \rightarrow \infty$, which function dominates?

(a) $0.25\sqrt{x}$

(b) $25,000x^{-3}$

3. As $x \rightarrow \infty$, which function dominates?

(a) $3 - 0.9^x$

(b) $\log x$

4. As $x \rightarrow \infty$, which function dominates?

(a) x^3

(b) 2^x

5. As $x \rightarrow \infty$, which function dominates?

(a) $10(2^x)$

(b) $72,000x^{12}$

6. Which of these functions dominates as $x \rightarrow \infty$?

(a) $f(x) = -5x$

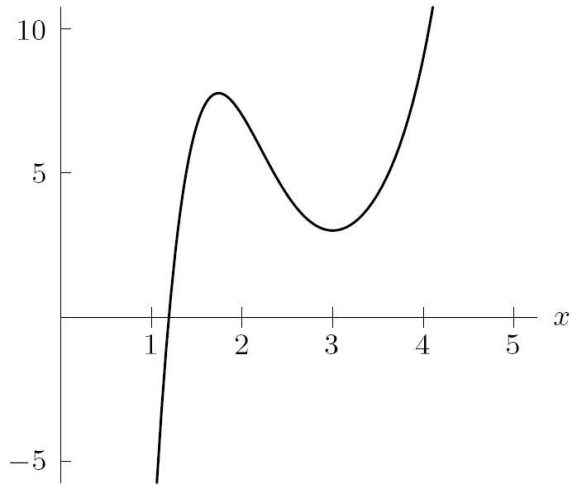
(b) $g(x) = 10^x$

(c) $h(x) = 0.9^x$

(d) $k(x) = x^5$

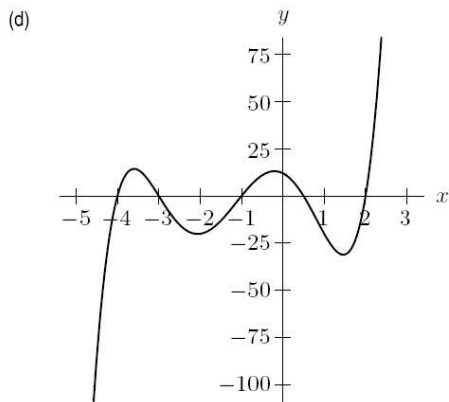
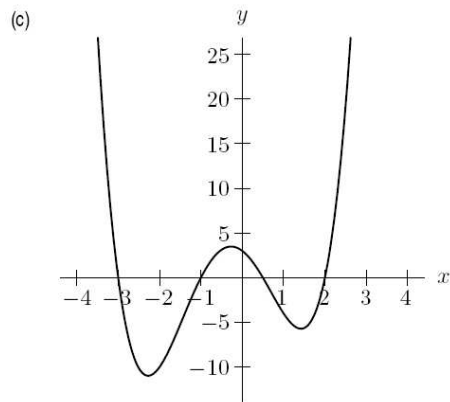
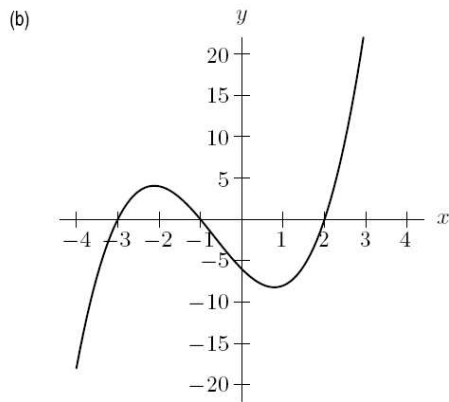
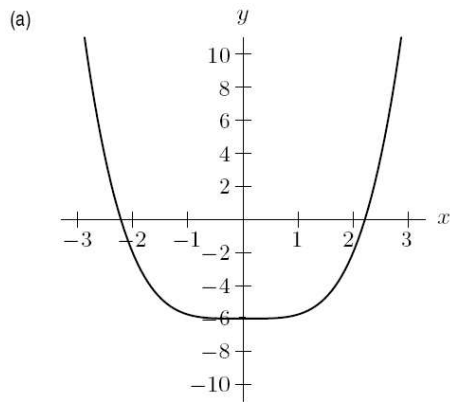
(e) $l(x) = \pi^x$

7. What is the degree of the graph of the polynomial in the figure below?

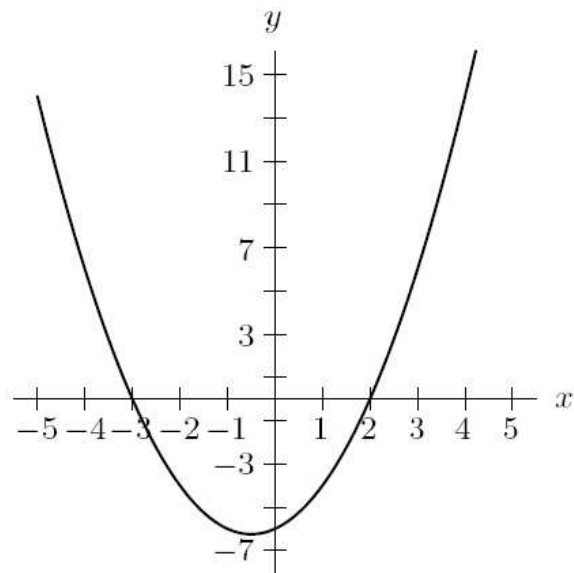


- (a) 3
- (b) 5
- (c) Either (a) or (b)
- (d) Neither (a) nor (b)
- (e) Any polynomial of degree greater than 2

8. The equation $y = x^3 + 2x^2 - 5x - 6$ is represented by which graph?



9. The graph below is a representation of which function?



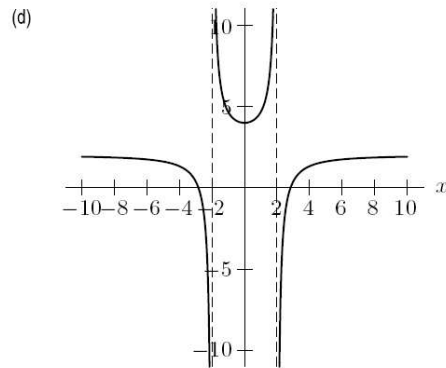
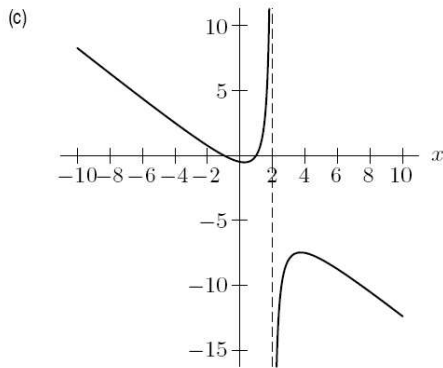
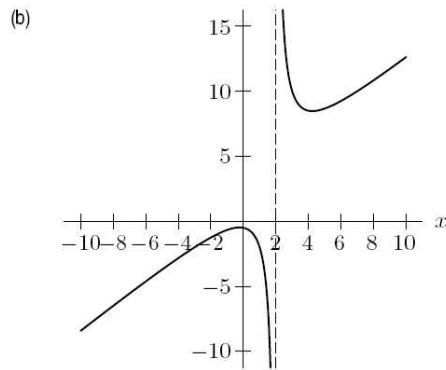
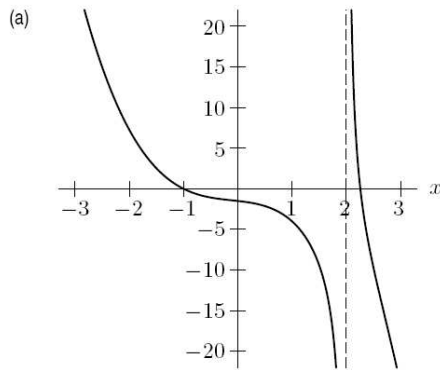
- (a) $y = 3x + 2$
- (b) $y = (x - 2)(x + 3)$
- (c) $y = (x - 6)(x - 2)$
- (d) $y = (x - 3)(x + 2)$

(e) none of these

10. Let $f(x) = \frac{x^2-1}{x+1}$ and $g(x) = x - 1$, then $f(x) = g(x)$.

- (a) True
- (b) False

11. Which if the following is a graph for $y = \frac{1-x^2}{x-2}$. (No calculators allowed.)



12. Which of the graphs represents $y = \frac{2x}{x-2}$?

