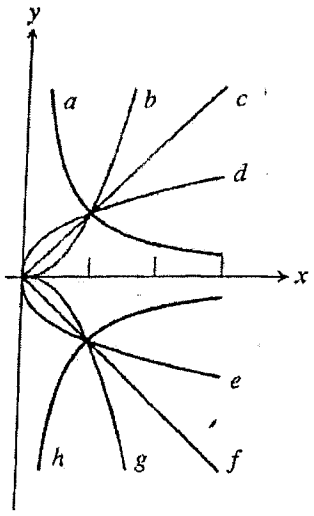
In exercises 1-6, match the equation to one of the curves labeled in the figure:



1. $f(x)=-\frac{2}{3}x^4$ g

2. $f(x)=\frac{1}{2}x^{-5}$ a

3. $f(x)=2x^{\frac{1}{4}}$ d

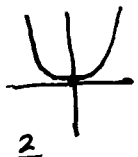
4. $f(x)=-x^{\frac{5}{3}}$ g

5. $f(x)=-2x^{-2}$ h

6. $f(x)=1.7x^{\frac{2}{3}}$ d

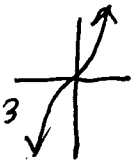
In exercises 7-12, describe how to obtain the graph of the given monomial function from the graph of $g(x)=x^n$ with the same power n. State whether f is even or odd. Sketch the graph.

7. $f(x)=\frac{2}{3}x^4$



parent: $y=x^4$
vertical shrink $*\frac{2}{3}$
even

8. $f(x)=5x^3$

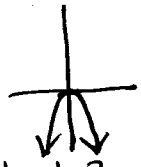


parent: $y=x^3$
vertical stretch $*3$
odd

9. $f(x)=-1.5x^5$

start: $y=x^5$
vertical stretch $*1.5$
reflect over x-axis
odd

10. $f(x)=-2x^6$



start: $y=x^6$
vertical stretch $*2$
reflect over x-axis
even

11. $f(x)=\frac{1}{4}x^8$

start: $y=x^8$
vertical shrink $*\frac{1}{4}$
even

12. $f(x)=\frac{1}{8}x^7$

start: $y=x^7$
vertical shrink $*\frac{1}{8}$
odd

13. **True or False:** The function $f(x)=x^{-\frac{2}{3}}$ is even. Justify your answer.

14. **True or False:** The graph $f(x)=x^{\frac{1}{3}}$ is symmetric about the y-axis. Justify your answer.

15. **Multiple-choice**: Let $f(x) = 2x^{-\frac{1}{2}}$. What is the value of $f(4)$?

(a) 1 (b) -1 (c) $2\sqrt{2}$ (d) $\frac{1}{2\sqrt{2}}$ (e) 4

16. **Multiple-choice**: Let $f(x) = -3x^{-\frac{1}{3}}$. Which of the following statements is true?

(a) $f(0) = 0$ (b) $f(-1) = -3$ (c) $f(1) = 1$

(d) $f(3) = 3$ (e) $f(0)$ is undefined

17. **Multiple-choice**: Let $f(x) = x^{\frac{2}{3}}$. Which of the following statements is true?

(a) f is an odd function.

(b) f is an even function.

(c) f is neither even nor odd.

(d) The graph of f is symmetric with respect to the x-axis.

(e) The graph of f is symmetric with respect to the origin.

18. **Multiple-choice**: Which of the following is the domain of the function $f(x) = x^{\frac{3}{2}}$?

(a) All reals

(b) $[0, \infty)$

(c) $(0, \infty)$

(d) $(-\infty, 0)$

(e) $(-\infty, 0) \cup (0, \infty)$