

Quiz for Lessons 10-1 Through 10-3

SECTION 10A

10-1 Inverse Variation

Tell whether each relationship represents an inverse variation. Explain.

1.

x	-5	-4	-3
y	10	-8	6

No; the product xy is not constant.

2.

x	18	9	6
y	2	4	6

Yes; the product xy is constant.

3. $y = \frac{3}{x}$ **yes**

4. $y + x = \frac{3}{4}$ **no**

5. $xy = -2$ **yes**

6. $y = \frac{x}{5}$ **no**

7. Write and graph the inverse variation in which $y = 3$ when $x = 2$. $y = \frac{6}{x}$

8. Write and graph the inverse variation in which $y = 4$ when $x = -1$. $y = \frac{-4}{x}$

9. The number of calculators Mrs. Hopkins can buy for the classroom varies inversely as the cost of each calculator. She can buy 24 calculators that cost \$60 each. How many calculators can she buy if they cost \$80 each? **18 calculators**

10-2 Rational Functions

Identify any excluded values and the asymptotes for each rational function. Then graph each function.

10. $y = \frac{12}{x}$

11. $y = \frac{6}{x+2}$

12. $y = \frac{4}{x-1}$

13. $y = \frac{2}{x+1} - 3$

14. Jeff builds model train layouts. He has \$75 to spend on packages of miniature landscape items. He receives 6 free packages with each order. The number of packages y that Jeff can buy is given by $y = \frac{75}{x} + 6$, where x represents the cost of each package in dollars. Describe the reasonable domain and range values and graph the function. **D: $x > 0$; R: natural numbers > 6**

10-3 Simplifying Rational Expressions

Find any excluded values of each rational expression.

15. $\frac{15}{n}$ **0**

16. $\frac{p}{p-8}$ **8**

17. $\frac{x+2}{x^2+6x+8}$
-4, -2

18. $\frac{t-1}{t^2+t}$ **-1, 0**

Simplify each rational expression, if possible. Identify any excluded values.

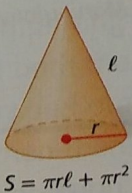
19. $\frac{3x^2}{6x^3} \cdot \frac{1}{2x}$; $x \neq 0$

20. $\frac{2n}{n^2-3n}$

21. $\frac{s+1}{s^2-4s-5}$

22. $\frac{12-3x}{x^2-8x+16}$

23. Suppose a cone and a cylinder have the same radius and that the slant height ℓ of the cone is the same as the height h of the cylinder. Find the ratio of the cone's surface area to the cylinder's surface area. **$\frac{1}{2}$**



20. $\frac{2}{n-3}$; $n \neq 0, 3$

21. $\frac{1}{s-5}$; $s \neq -1, 5$

22. $-\frac{3}{x-4}$; $x \neq 4$

Ready to Go On? 651

READY TO GO ON?

SECTION 10A

Organizer

Objective: Assess students' mastery of concepts and skills in Lessons 10-1 through 10-3.



Countdown to Mastery Week 23

Resources



Assessment Resources
Section 10A Quiz



Test & Practice Generator
One-Stop Planner®

INTERVENTION

Resources



Ready to Go On?
Intervention and
Enrichment Worksheets



Ready to Go On? CD-ROM



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Answers

3. $xy = 3$

4. cannot be written in the form $y = \frac{k}{x}$

5-6. See p. A25.

7-8, 10-14. For graphs, see p. A25

READY TO GO ON?
Diagnose and Prescribe

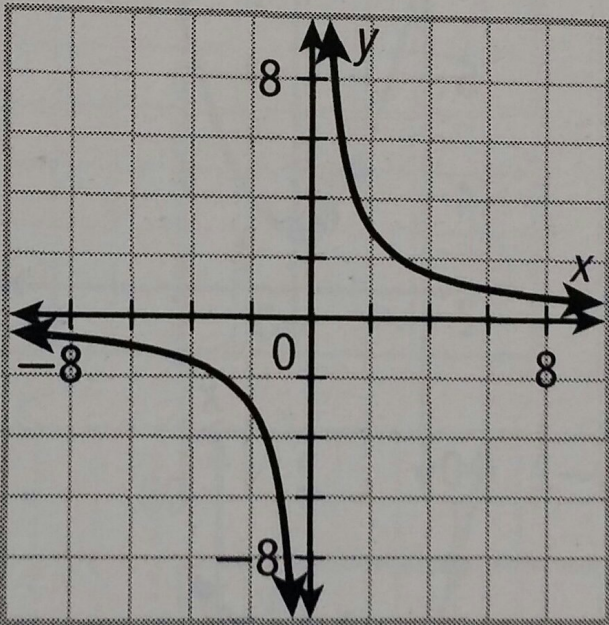
YES
ENRICH

10A Ready To Go On?

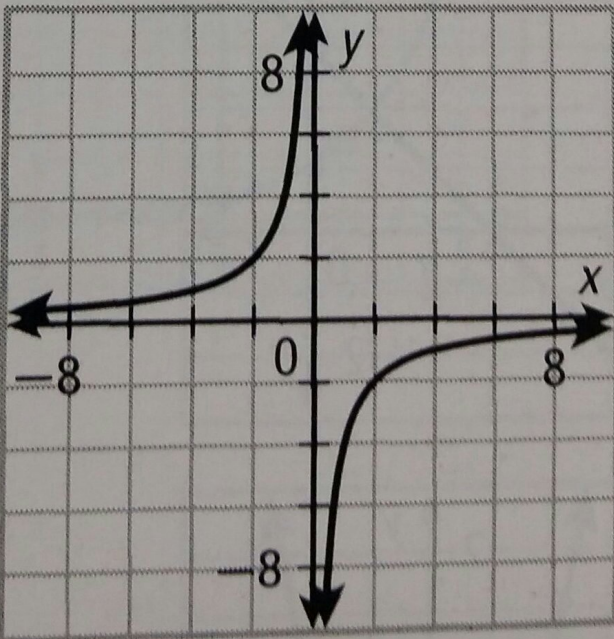
5. constant product

6. cannot be written in the form $y = \frac{k}{x}$

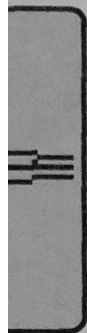
7.



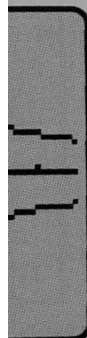
8.



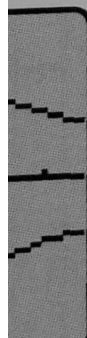
$x = 15$
graph
x-axis.



4.7

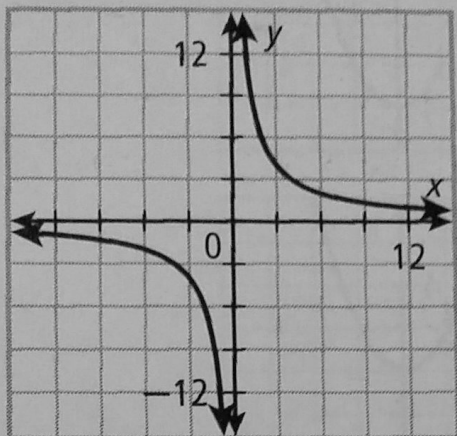


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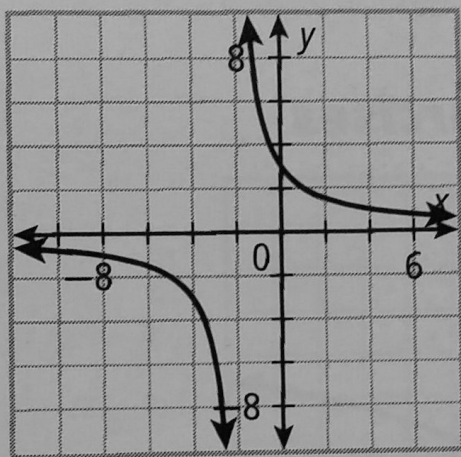


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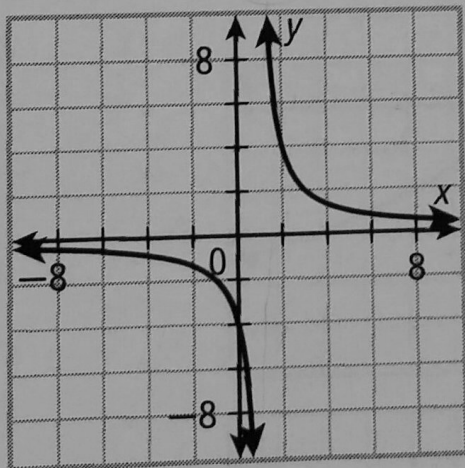
10. $x \neq 0$; $x = 0$ and $y = 0$



11. $x \neq -2$; $x = -2$ and $y = 0$



12. $x \neq 1$; $x = 1$ and $y = 0$



13. $x \neq -1$; $x = -1$ and $y = -3$

