



NAME _____

DATE _____

PERIOD _____

Lesson 5: Inverse Universe

Ready, Set, Go



Ready

Use properties of exponents to rewrite the expressions. Write your answers in exponential form with positive exponents.

1. $\sqrt[7]{x^2} \cdot \sqrt[7]{x^3}$

2. $\sqrt[3]{x} \cdot \sqrt[4]{x} \cdot \sqrt[6]{x}$

3. $\sqrt[6]{a} \cdot \sqrt[3]{a^2} \cdot \sqrt[5]{b^3}$

4. $\sqrt[5]{32} \cdot \sqrt{9} \cdot \sqrt[3]{27}$

5. $\sqrt[4]{8} \cdot \sqrt[3]{16} \cdot \sqrt[6]{2}$

6. $(5^2)^3$

7. $(7^2)^{-1}$

8. $(3^{-4})^{-5}$

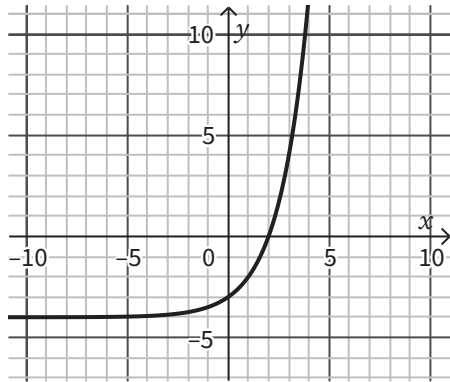
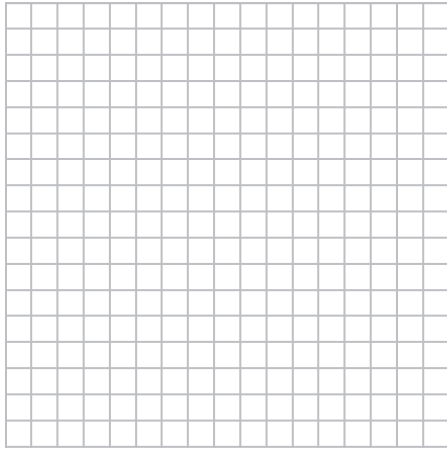
9. $\left(\frac{5^{-4}}{5^2}\right)^3$



NAME _____

DATE _____

PERIOD _____

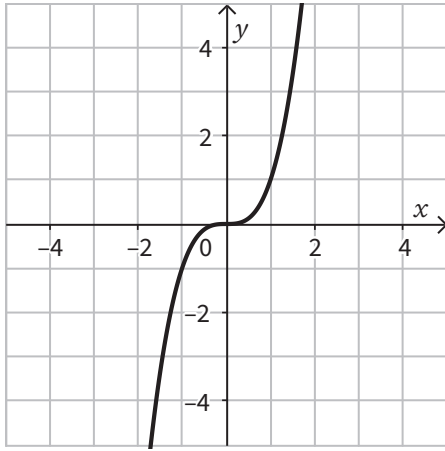
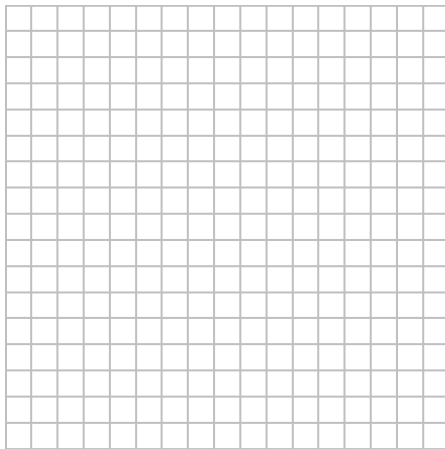
Inverse $f^{-1}(x)$:**12.** Function $f(x)$: $f(x) = -2x + 4$ Inverse $f^{-1}(x)$:**13.** Function $f(x)$:



NAME _____

DATE _____

PERIOD _____

Inverse $f^{-1}(x)$:**14.** Function $f(x)$: $f(x) = 13 - x$ Inverse $f^{-1}(x)$:**15.** Function $f(x)$:

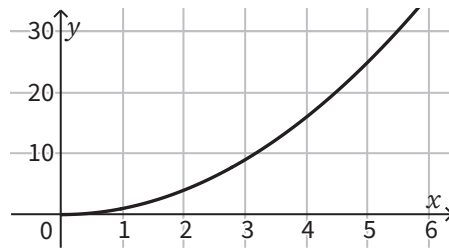


NAME _____

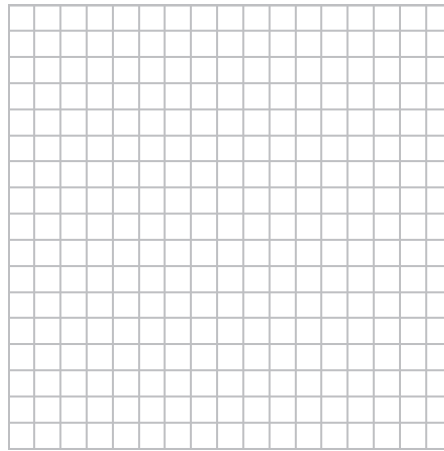
DATE _____

PERIOD _____

x	$f(x)$
0	0
1	1
2	4
3	9
4	16

Inverse $f^{-1}(x)$:

x	$f^{-1}(x)$
-----	-------------

Calculate $f(g(x))$ and $g(f(x))$ for each pair of functions.

16. $f(x) = 3x + 7$; $g(x) = -4x - 11$

17. $f(x) = -4x + 60$; $g(x) = -\frac{1}{4}x + 15$

18. $f(x) = 10x - 5$; $g(x) = \frac{2}{5}x + 3$



NAME

DATE

PERIOD

19. $f(x) = -\frac{2}{3}x + 4$; $g(x) = -\frac{3}{2}x + 6$

20. Look back at your calculations for $f(g(x))$ and $g(f(x))$. Two of the pairs of equations are inverses of each other. Which pairs do you think they are?

Why?