Algebra 2 Name_____ ID: 1

Quiz Review

Date_____ Period____

Find the inverse of each function.

1) $g(x) = -\frac{2}{x-2} + 1$

2) $g(x) = -1 + (x-2)^3$

3) $g(x) = \frac{-10 - 2x}{5}$

4) $f(x) = x - 2$

State if the given functions are inverses by using composition.

5) $f(n) = \frac{-20 + 2n}{5}$

$g(n) = \frac{-4n + 23}{7}$

6) $f(x) = \sqrt[5]{x}$

$g(x) = -2x^5 - 3$

7) $g(x) = \frac{3}{x-2}$

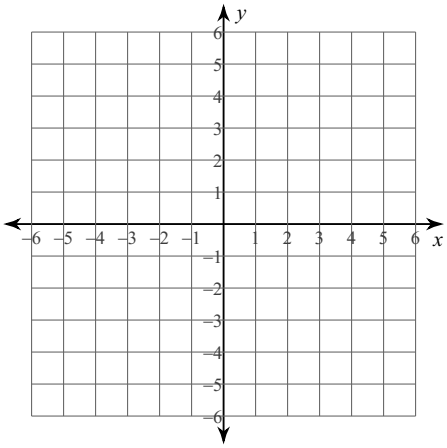
$f(x) = \frac{3}{x} + 2$

8) $g(x) = (x-1)^5$

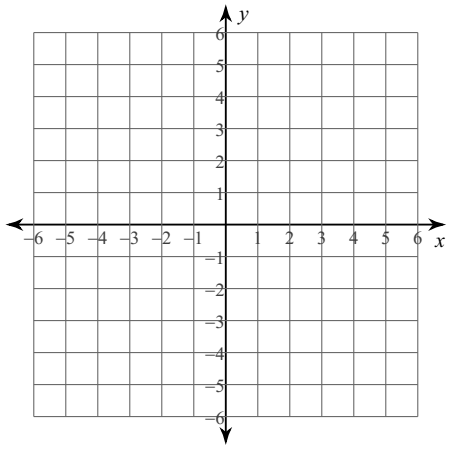
$f(x) = \sqrt[5]{x} + 1$

State if the given functions are inverses by using composition. Show the graph of both, and the line y=x.

9) $g(x) = x^3 - 2$

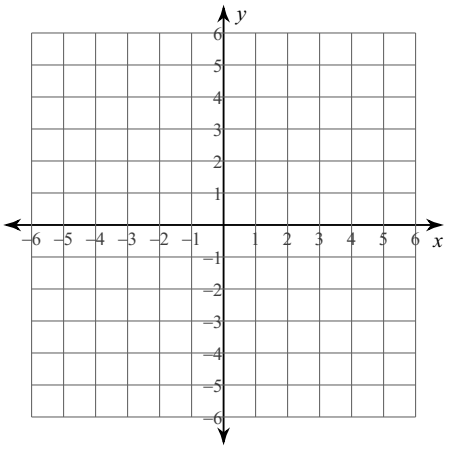


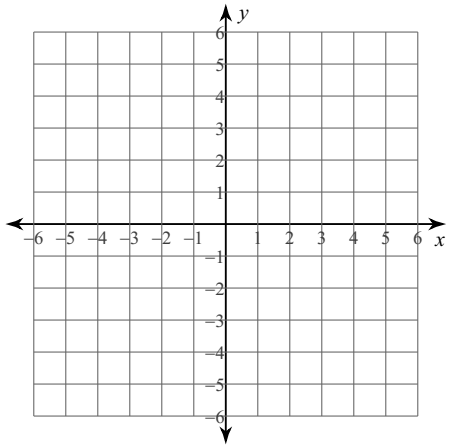
10) $g(n) = \frac{1}{n-2}$



11) $g(n) = \frac{1}{2}n + \frac{3}{2}$

12) $h(x) = -1 - \frac{2}{3}x$





13) Find the point(s) of intersection of the function and its inverse in the graphs above. Use algebraic steps. (You should verify with your graph.)

Perform the indicated operation.

14) $f(n) = 2n - 2$
$g(n) = n^2 + 2n$
Find $f(n) + 3g(n)$

15) $g(x) = 2x - 5$
$f(x) = x^2 - 5x$
Find $f(g(x))$

16) $f(x) = -x + 4$
$g(x) = -3x + 2$
Find $f(x) - g(x)$

17) $f(x) = x^2 + x$
$g(x) = x + 2$
Find $f(x) \cdot g(x)$

18) $g(n) = -4n - 1$
Find $g(g(-1))$

19) $g(x) = 4x - 4$
$f(x) = -x^2 + x$
Find $g(3) \div f(3)$

20) $f(t) = 3t + 1$
$g(t) = t + 4$
Find $f(-7) \div g(-7)$

21) $f(n) = n^2$
$g(n) = n - 4$
Find $f(9) + g(9)$

Simplify. Your answer should contain only positive exponents.

22) $4xy^4 \cdot 3x^3y^4 \cdot 2x^2$

23) $4x^4y^2 \cdot x^{-3}y^4 \cdot 3x^{-4}y^{-1}$

24) $\left(2x^2y^{-1}\right)^4$

25) $\left(4uv^4\right)^4$

26) $\frac{4y^3}{2yx^{-2}}$

27) $\frac{2u^3v^3}{3u^{-4}v^3}$

28) $\frac{3v \cdot 4uv^2}{u^{-3}}$

29) $\frac{u^4v^2 \cdot 4uv^2}{3u^{-2}v^{-2}}$

30) $\frac{2a^{-1}b^4 \cdot \left(2a^{-2}\right)^{-3} \cdot 2a^2}{a^3b^4}$

31) $\frac{2a^{-2}b^3 \cdot 2a^3b^4}{\left(2ab^{-3}\right)^3 \cdot 2a^4b^2}$

Answers to Quiz Review (ID: 1)

1) $g^{-1}(x) = \dfrac{2}{-x+1} + 2$

2) $g^{-1}(x) = \sqrt[3]{x+1} + 2$

3) $g^{-1}(x) = \dfrac{-5x-10}{2}$

4) $f^{-1}(x) = x + 2$

5) No

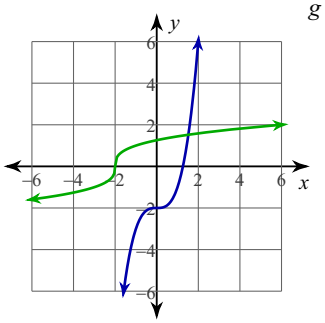
6) No

7) Yes

8) Yes

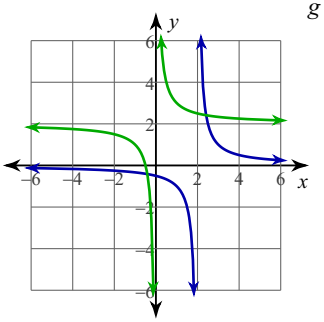
9)

$g^{-1}(x) = \sqrt[3]{x+2}$



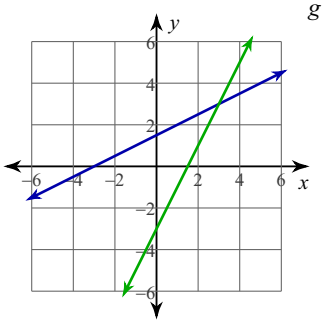
10)

$g^{-1}(n) = \dfrac{1}{n} + 2$



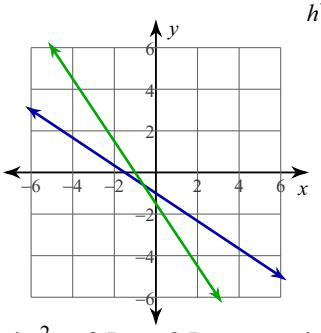
11)

$g^{-1}(n) = 2n - 3$



12)

$h^{-1}(x) = -\dfrac{3}{2}x - \dfrac{3}{2}$



13)

14) $3n^2 + 8n - 2$

15) $4x^2 - 25x + 25$

16) $2x + 2$

17) $x^3 + 3x^2 + 2x$

18) -13

19) $-\dfrac{4}{3}$

20) $\dfrac{20}{3}$

21) 86

22) $24x^6y^8$

23) $\dfrac{12y^5}{x^3}$

24) $\dfrac{16x^8}{y^4}$

25) $256u^4v^{16}$

26) $2x^2y^2$

27) $\dfrac{2u^7}{3}$

28) $12u^4v^3$

29) $\dfrac{4u^7v^6}{3}$

30) $\dfrac{a^4}{2}$

31) $\dfrac{b^{14}}{4a^6}$