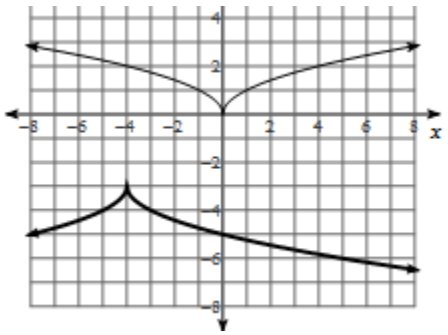
NAME:_____

UNIT 8 Corrective Assignment

Algebra Skillz (1 pt each)

Below, the parent function $f(x) = \sqrt[4]{x^2}$ is represented by the thin graph.



1) Write the equation of the function in bold.

2) $\dfrac{2\sqrt{20}}{\sqrt{40}}$

3) $\dfrac{\sqrt{10}}{2\sqrt{5}}$

4) Factor:
$36p^4 + 100p^3 + 56p^2$

5) Factor and solve.
$8x^2 - 41 = -6 - 33x$

Put into exponential form. (2 pts)

6) $\left(\sqrt[5]{9p}\right)^4$

Put into radical form. (2 pts)

7) $(7y)^{3/4}$

8) Find the indicated real nth root(s) of a. (2 pts)

n = 6, a = 729

9) Simplify. (2 pts)

$(64)^{5/3}$

Directions: Simplify. (3 points each)

10) $10x^{6/5} \cdot -7x^{1/3}$

11) $-12\sqrt[5]{-320x^{13}y^7}$

Directions: Use the following: $f(x) = 3x + 9$, $g(x) = 10x + 8$

12) Find f(x) – g(x)

Directions: Use the following: $f(x) = -2x^2 + 5x - 5$, $g(x) = 4x + 6$

13) Find f(g(x))

Find the inverse function.

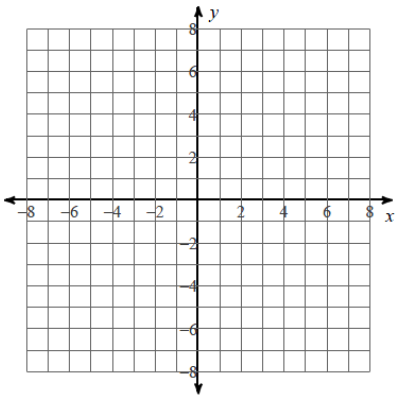
14) $f(x) = 3(x+8)^2 + 12$

Find the inverse function.

15) $g(x) = \frac{3x^3 - 12}{6}$

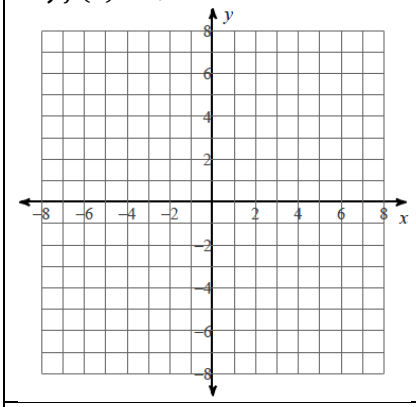
Graph each function. Show at least 3 points.

16) $g(x) = -2\sqrt[3]{x-5} + 2$

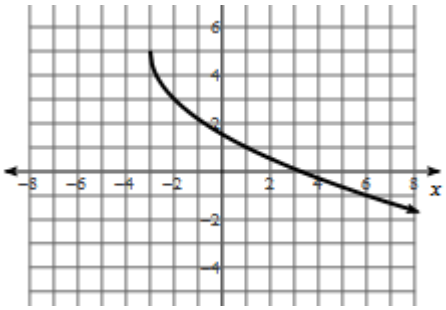


Graph each function. Show at least 3 points.

17) $f(x) = \sqrt{x+3} - 5$



18) Find the equation for each function.



Directions: #19-22. Solve each equation. Remember to check for extraneous solutions. (3 pts each)

19) $-187 = -3(3d - 62)^{3/2} + 5$

20) $k - 7 = \sqrt{x-5}$

UNIT 8 Applications and Extensions

1) RIGHT TO PLAY is a global organization that uses the transformative power of play - **playing sports, playing games** - to educate and empower children facing adversity. Mr. Kelly decides to raise money for this charity and models his function by $f(x) = 2.3x^2 + 18.75$, where $f(x)$ is the amount of money raised for every x months. Mr. Bean does the same and models his function $g(x) = 8.2x^2 + 3.7x + 3.75$. Mr. Brust's model is represented by the function $h(x) = 1.2x^3 + 2.5x^2 + 20.5$.

a) Find out how much each of the men have raised after one year. (3 points) [Be careful with the units]

b) Bean and Kelly soon realize that they need to join forces and combine their efforts in order raise more money than Brust. Find this new function and label it j(x). (3 points)

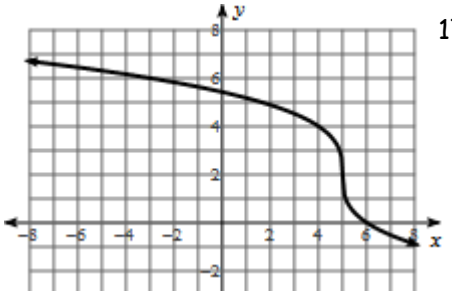
2) Brust and Bean are battling for superiority at RHS. They want to see who will have more students in their class by the end of the year. Brust models his function with $f(m) = m + 147$, where f(m) the number of students after m, months. Bean (who's a bit more exact) models his function with $g(m) = \sqrt{4m - 7} + 150$.

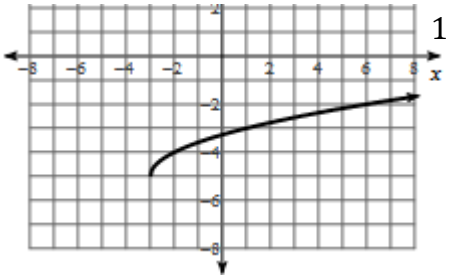
a) When will the two teachers have the same amount of students? (4 points)

ANSWERS

1) $\sqrt[4]{(x+4)^2} - 3$ 2) $\sqrt{2}$ 3) $\frac{\sqrt{2}}{4}$ 4) $4p^2(9p + 7)(p + 2)$ 5) x = -5 or $\frac{7}{8}$ 6) $(9p)^{4/5}$ 7) $\left(\sqrt[4]{7y}\right)^3$ 8) ± 3

9) 1024 10) $-70x^{23/15}$ 11) $24x^2y\sqrt[5]{10x^3y^2}$ 12) -7x+1 13) $-32x^2 - 76x - 47$ 14) $\pm\sqrt{\frac{1}{2}x - 4} - 8$ 15) $\sqrt[3]{2x+4}$

16) 

17) 

18) $-2\sqrt{x+3} + 5$ 19) 26

20)9

Applications

1a) Kelly: $349.95 Bean: $1228.95 Brust: $2452.10 1b) $j(x) = 10.5x^2 + 3.7x + 22.5$

2a) 8 months.