Algebra 2 Name_____ ID: 1

Practice TEST (Radicals) 2019

Date_____ Period____

Simplify.

1) $\sqrt[3]{375}$

2) $\sqrt[4]{64}$

3) $\sqrt[5]{-128}$

4) $\sqrt[3]{-250}$

5) $-\sqrt[4]{80x^2y^{10}}$

6) $2\sqrt{900x^2y^5}$

7) $-6\sqrt{324m^5n}$

8) $9\sqrt[3]{270a^2b^7}$

Write each expression in radical form.

9) $3^{\frac{3}{4}}$

10) $6^{\frac{2}{3}}$

11) $10^{\frac{8}{5}}$

12) $7^{\frac{3}{2}}$

Write each expression in exponential form.

13) $\left(\sqrt{7x}\right)^3$

14) $\left(\sqrt[6]{v}\right)^7$

15) $\dfrac{1}{\left(\sqrt{3n}\right)^3}$

16) $\dfrac{1}{\sqrt[3]{7p}}$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

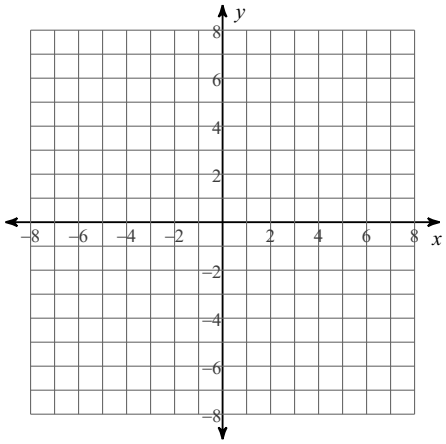
17) $x^{\frac{3}{2}}x^{\frac{3}{2}}$

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

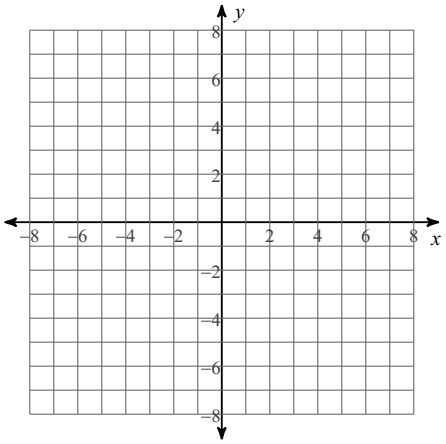
19) The initial amount deposited in a savings account is 1000. The amount a in dollard in the account after t years can be represented by the function a(t)= 1000(2^(t/24)). To the nearest dollar, what will the amount in the account be after 6 years?

A) Sketch the graph of each function. B) State the domain and range.

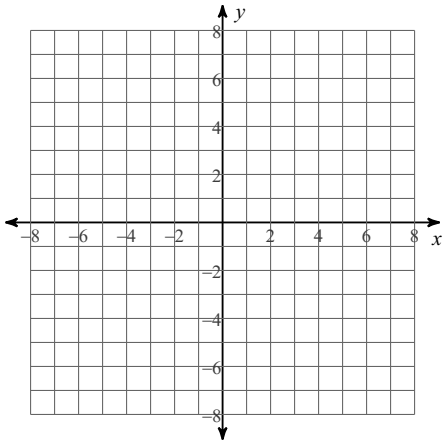
20) $y = 2\sqrt{x-3}$



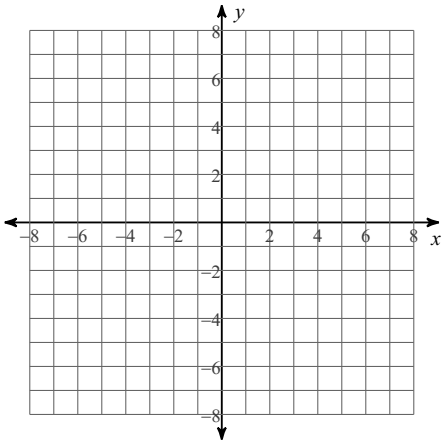
21) $y = 4 + \sqrt{x}$



22) $y = 2\sqrt[3]{x+3}$



23) $y = \sqrt[3]{x} - 5$



24) A company manufactured cans for pet food. The function $f(x)=\sqrt{\frac{x}{40}}$ models the radius in centimeters of a can holding x cubic cm of dog food. The graph of the corresponding function for cans of cat food is a horizonal compression of f by a factor of 3/5. Write the corresponding function g for cans of cat food, and use it to estimate the radius of a can holding 216 cubic cm of cat food.

25) Use the description to write the square-root function g. The parent function $f(x) = \sqrt{x}$ is reflected across the x-axis and then translated 4 units to the right and 6 units up.

Solve each equation. Remember to check for extraneous solutions.

26) $7 = \sqrt{-3 - 13x}$

27) $\sqrt{15 - x} = \sqrt{2x - 6}$

28) $\sqrt{\frac{r}{3}} = 8$

29) $\sqrt{-24 + 10n} = n$

30) $-6 = \sqrt{20 - 4r} - r$

31) $-4 + \sqrt{6x + 15} = x$

32) The time T in seconds required for a pendulum to complete one back and forth swing can be determined from the formula $T= 2\pi\sqrt{\frac{L}{9.8}}$, where L is the length of the pendulum in meters. Estimate the length of a pendulum that completes one back and forth swing in 2.5 s.

Answers to Practice TEST (Radicals) 2019 (ID: 1)

1) $5\sqrt[3]{3}$

2) $2\sqrt[4]{4}$

3) $-2\sqrt[5]{4}$

4) $-5\sqrt[3]{2}$

5) $-2y^2\sqrt[4]{5x^2y^2}$

6) $60y^2x\sqrt{y}$

7) $-108m^2\sqrt{mn}$

8) $27b^2\sqrt[3]{10a^2b}$

9) $\left(\sqrt[4]{3}\right)^3$

10) $\left(\sqrt[3]{6}\right)^2$

11) $\left(\sqrt[5]{10}\right)^8$

12) $\left(\sqrt{7}\right)^3$

13) $(7x)^{\frac{3}{2}}$

14) $v^{\frac{7}{6}}$

15) $(3n)^{-\frac{3}{2}}$

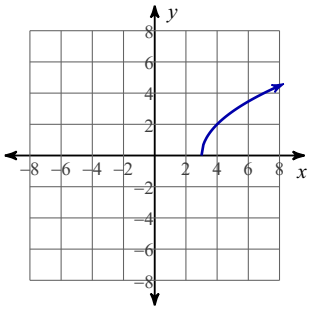
16) $(7p)^{-\frac{1}{3}}$

17) x^3

18) $b^{\frac{28}{3}}$

19) \$1189

20)



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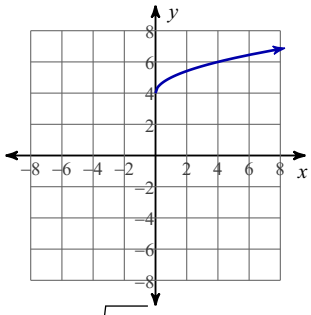

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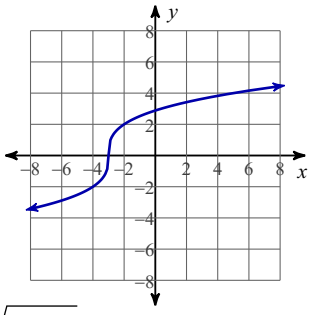

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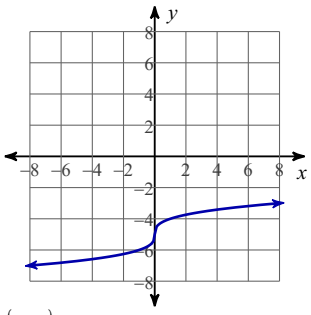

24) $g(x)=\sqrt{\frac{x}{24}}$; 3cm

25) $g(x)= -\sqrt{x-4}+6$

26) $\{-4\}$

27) $\{7\}$

28) $\{192\}$

29) $\{4, 6\}$

30) No solution.

31) $\{-1\}$

32) about 1.6 meters