C11 - 5.0 - Radicals Review

1) Simplify

$a)\ \frac{1}{2}\sqrt[2]{45}$

$b)\ 2x\sqrt[2]{125x^5}$

$c)\ \sqrt[3]{189}$

$d)\ \sqrt{\frac{1}{16}}$

$e)\ \sqrt{.04}$

$f)\ \frac{\sqrt{12}}{\sqrt{6}}$

2) Solve

$a)\ x^2 = 9$

$b)\ x^2 + 100 = 0$

$c)\ x^3 = -64$

$d)\ x^2 = 3$

$e)\ x^{\frac{3}{2}} = 8$

3) Combine

$a)\ 7\sqrt[2]{2}$

$b)\ -3\sqrt[3]{6}=$

$c)\ \frac{3}{2}x\sqrt[3]{8x}$

4) Multiply/Divide

$a)\ 10\sqrt{5x} \times 3\sqrt{7}$

$b)\ 9 \times 3\sqrt{2}$

$c)\ \left(3\sqrt{2}\right)^2$

$d)\ 7\sqrt[3]{3} \times 2\sqrt[3]{5}$

$e)\ 9\sqrt[3]{5} \times 3\sqrt[2]{7}$

$f)\ \sqrt{3^2}$

$g)\ \left(\sqrt{x-999}\right)^2$

$h)\ \left(2\sqrt{x-1}\right)^2$

$i)\ 2\sqrt{7}\left(3\sqrt{6}+\sqrt{2}\right)$

$j)(\sqrt{2}+\sqrt{3})(\sqrt{6}+\sqrt{2})$

$k)\ (\sqrt{7}+\sqrt{5})(\sqrt{7}-\sqrt{5})$

$l)\ \frac{8\sqrt{18}}{4\sqrt{2}}$

$m)\ \frac{8\sqrt{6x^3}}{4\sqrt{2x}}$

5) Add/Subtract

$a)\ \sqrt[2]{12} + 2\sqrt[2]{3}$

$b)\ 2\sqrt[2]{12} - 1\sqrt[2]{75}$

$c)\ \frac{1}{2}\sqrt[2]{28} + 3\sqrt[2]{63} - 2$

$d)\ 2x\sqrt[2]{20x} + 3\sqrt[2]{45x^3}$

6) Find the Restrictions

$a)\ \sqrt{x+2}$

$b)\ \sqrt{2x-3}$

$c)\ \sqrt{3-x}$

7) Solve

$a)\ \sqrt{x} - 2 = 6$

$b)\ \sqrt{x} + 8 = 6$

$c)\ \sqrt{x} = \sqrt{6-x}$

$d)\ 2\sqrt{x+4} = 4$

$e)\ x = \sqrt{2x+3}$

$f)\ 2x = \sqrt{7x-3}$

$g)\ \sqrt{x+3} - 1 = x$

8) Rationalize the Denominator

$a)\ \frac{1}{\sqrt{5}}$

$b)\ \frac{2}{\sqrt{2}}$

$c)\ \frac{1}{2\sqrt{3}}$

$d)\ \frac{5}{\sqrt[3]{3}}$

$e)\ \frac{3}{\sqrt{3}+1}$

$f)\ \frac{2+\sqrt{3}}{\sqrt{6}-1}$

And add.

$g)\ \frac{10}{\sqrt{5}} - \frac{6}{\sqrt{5}-2}$

9) Graph/State the Domain and Range and find any Intercepts

$y = \sqrt{x}$

10) $v_f = \sqrt{2ad}$

Find the final velocity, v_f in $\frac{m}{s}$, if a car travels from rest 100 meters accelerating at 2 meters per second.

11) $d^* = \frac{1}{2}at^2 \qquad v^* = at$

Find the time , t in seconds, if a car travels from rest a distance, d, of 100 meters accelerating, a, at 2 meters per second squared. Find the final velocity v_f.

Simplify
Combine
Solve
Add/Subtract
Multiply/Divide
Restrictions
Solve
Rationalize
Word Problems
Graph

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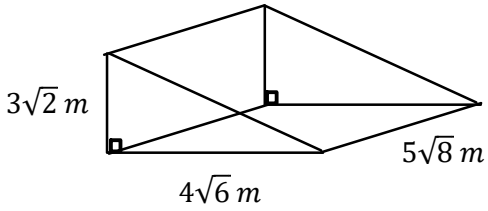
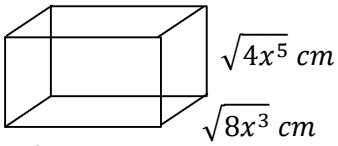
12) Find the Volume

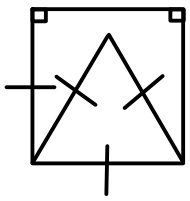


13) Find an expression for Volume



$\frac{3}{4}\sqrt{x}\ cm$

14) Find the perimeter of an equilateral triangle inside of a square with area 72 m^2.



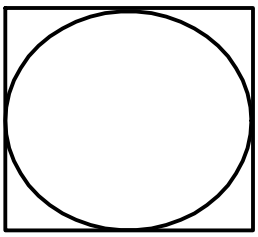
15) The period,T, of a pendulum related to its length (L) is:

$T = 2\pi\sqrt{\frac{L}{10}}$

Find an expression for L.

Find L if $T = 1.4$

16) A circle with area $24\pi\ cm^2$ is inscribed in a square. Find the diameter of the circle. Find the perimeter and area of the square.



17) A square with the diagonal length of $2\sqrt{6}\ meters$ is inscribed in a circle. Find the perimeter and area of the square.

Find the circumference and area of the circle.