

Name: _____

Word Problems on Radicals

- 1 The speed of water wave is given by the equation $s = 126\sqrt{c}$, where s is the speed in kilometers per hour, and c is the average depth of the water in kilometers.
- Write the equation with respect to c .
 - If the wave is travelling at a speed of 105 km/hr, find the average depth of the water.
- 2 A rectangle has a perimeter of 44 m, with a length of 8 m and a width of $\sqrt{x + 4}$. Find x .
- 3 Suppose you are 300 feet above the sea-level. If 'd' is the distance in miles that you can see to the horizon which is given by the formula $d = \sqrt{\frac{3h}{2}}$, where 'h' is the person's height above the sea level in feet then find d.
- 4 The escape velocity 'V' from a planet is given by the equation $V = \sqrt{\frac{2GM}{R}}$, where 'G' is the gravitational constant, 'M' is the mass of the planet, and 'R' is the radius of the planet. Express R in terms of G, M and V.

Name: _____

Answers

Word Problems on Radicals

- 1 The speed of water wave is given by the equation $s = 126\sqrt{c}$, where s is the speed in kilometers per hour, and c is the average depth of the water in kilometers.
- a) Write the equation with respect to c .
- b) If the wave is travelling at a speed of 105 km/hr, find the average depth of the water.

a) $c = \frac{s^2}{15,876}$

b) 0.6941 km

- 2 A rectangle has a perimeter of 44 m, with a length of 8 m and a width of $\sqrt{x + 4}$. Find x .

$x = 192$ m

- 3 Suppose you are 300 feet above the sea-level. If 'd' is the distance in miles that you can see to the horizon which is given by the formula $d = \sqrt{\frac{3h}{2}}$, where 'h' is the person's height above the sea level in feet then find d.

21.2 miles

- 4 The escape velocity 'V' from a planet is given by the equation $V = \sqrt{\frac{2GM}{R}}$, where 'G' is the gravitational constant, 'M' is the mass of the planet, and 'R' is the radius of the planet. Express R in terms of G, M and V.

$R = \frac{2GM}{V^2}$