



From What Malady Do Politicians Often Suffer?

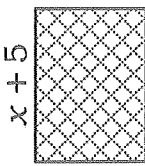
Solve the equation or problem by factoring. Find your solution at the bottom of the page and cross out the letter under it. When you finish, the answer to the title question will remain.

1 $u^2 + 19u = -60$ 2 $3d^2 = 10 - 13d$ 3 $7x^2 - 10x = 6x^2 - 21$ 4 $3a^2 + a = a^2 + 10a + 11$

5 $n(n + 3) = 70$ 6 $b(5b - 4) = 12$ 7 $(w + 5)(w + 2) = 40$ 8 $4t^2 - 9t + 16 = 15 - 4t^2$

9 $(2k + 4)(2k + 9) = 3k^2 + 11k$ 10 $5 + 6y(y + 2) = 5y + 8$ 11 $(m - 3)^2 = 64$

- 12 The length of a rectangle is 5 cm more than the width. The area is 84 cm^2 . Find the dimensions of the rectangle.



- 13 A square banner had 4 ft added to its width and 2 ft subtracted from its height. The banner then had an area of 91 ft^2 . How long was a side of the original square banner?

- 14 The dimensions of a rectangular garden were 3 m by 10 m. When both dimensions were increased by the same amount, the area of the garden doubled. Find the dimensions of the new garden.

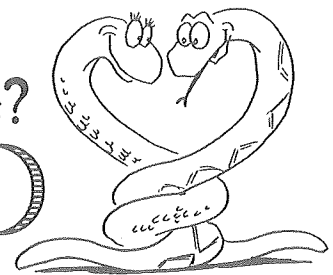
Answers – Odd-Numbered Exercises


S	$\{-5, 11\}$	U	$\{-15, -4\}$	S	9 ft
T	$\{-2, 15\}$	E	$\{-9, -4\}$	P	$\{-10, 3\}$
O	$\{-3, -12\}$	R	$\{3, 7\}$	U	8 ft
P	$\{3, 7\}$	E	$\{-10, -7\}$	S	9 ft
R	$\{-9, -4\}$	T	$\{-3, 7\}$	H	$\{-10, 7\}$
S	$\{-5, 11\}$	H	$\{-10, 7\}$	E	

Answers – Even-Numbered Exercises

D	$\{-\frac{1}{2}, 1\}$	O	$\{\frac{11}{2}, -1\}$	S	$\{\frac{3}{5}, -2\}$
E	$\{\frac{1}{8}, 1\}$	S	$\{\frac{3}{1}, \frac{2}{3}\}$	I	$\{-\frac{2}{3}, \frac{1}{3}\}$
M	$\{\frac{3}{2}, -5\}$	E	$\{\frac{3}{5}, -2\}$	E	$\{8 \times 13 \text{ cm}\}$
A	$\{8, -1\}$	I	$\{-\frac{2}{3}, \frac{1}{3}\}$	I	$\{7 \times 12 \text{ cm}\}$
N	$\{8, -1\}$	K	$\{-\frac{5}{6}, 2\}$	K	$\{4 \times 15 \text{ m}\}$
Y	$\{\frac{1}{8}, 1\}$	C	$\{8 \times 13 \text{ cm}\}$	Y	

What Did the Boy Snake Say to the Girl Snake?



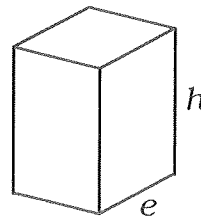
Write the letter of the correct answer in the box containing the exercise number.
If the answer has a , shade in the box instead of writing a letter in it.

Solve by finding square roots. Express irrational solutions using radicals.

- ① $x^2 = 64$ ② $n^2 = 83$ ③ $7c^2 = 91$
 ④ $3w^2 = 588$ ⑤ $y^2 - 121 = 0$ ⑥ $4a^2 - 9 = 35$
 ⑦ $5x^2 + 12 = 87$ ⑧ $8t^2 - 82 = -10$ ⑨ $8t^2 - 10 = -82$
 ⑩ A square field has an area of 1024 ft^2 . Find the length of a side.

Solve by finding square roots. Express irrational solutions as decimals rounded to the nearest tenth. In Exercises 20-21, use 3.14 for π .

- ⑪ $3k^2 + 4 = 64$ ⑫ $5 + 16b^2 = 117$ ⑬ $70 - 2m^2 = 0$
 ⑭ $\frac{x^2}{4} - 15 = 8$ ⑮ $10 + \frac{a^2}{9} = 26$ ⑯ $11 - \frac{1}{2}y^2 = -4$
 ⑰ $5d^2 + 2 = 3.8$ ⑱ $49x^2 = 16$ ⑲ $81t^2 - 100 = -99$
 ⑳ Roundup Elementary School wants a large circle painted on the playground. The painter has a gallon can that will cover 400 ft^2 . Find the radius of the largest circle he can paint. (Use $A = \pi r^2$)
 ㉑ Atlas Globe Co. wants to produce a globe with a surface area of 900 in^2 . The surface area is given by the formula $A = 4\pi r^2$, where r is the radius of the sphere. What should the radius be?
 ㉒ Suppose you are designing a juice carton in the shape of a square prism. The volume is given by the formula $V = e^2h$, where e is the length of an edge of the base and h is the height. You want the volume to be 1000 cm^3 and the height to be 16 cm . How long should an edge of the base be?



Answers 1-10

- O $\pm\sqrt{13}$
 I ± 8
 W ± 11
 H 32 ft
 I $\pm\sqrt{15}$
 ● ± 14
 N 28 ft
 S $\pm\sqrt{83}$
 T ± 3
 A $\pm\sqrt{11}$
 R $\pm\sqrt{10}$
 ● no solution

Answers 11-22

- M 7.2 cm
 C ± 5.9
 N 9.2 in.
 U $\pm \frac{1}{9}$
 ● ± 0.6
 H 7.9 cm
 O ± 9.6
 K 11.3 ft
 ● ± 2.6
 T ± 3.4
 A ± 5.5
 U ± 4.5
 H 12.5 ft
 S $\pm \frac{4}{7}$
 B 8.5 in.
 Q ± 12

10 14 5 12 16 21 3 11 8 4 6 17 15 19 1 13 20 9 22 7 2 18