Why Is a Duplicate Key Like a Small Cake ?

Solve each equation below. (Be sure to check each apparent solution in the original equation.) Cross out the box that contains your solution. When you finish, print the letters from the remaining boxes in the spaces at the bottom of the page.

(1) $\sqrt{x} = 8$

(2) $\sqrt{4y} = 10$

(3) $\sqrt{6x} = 12$

(4) $\sqrt{\frac{x}{5}} = 3$

(5) $\sqrt{\frac{a}{3}} = 10$

(6) $\sqrt{x} + 7 = 11$

(7) $\sqrt{3x} - 1 = 5$

(8) $\sqrt{5y} + 3 = 7$

(9) $\sqrt{2b + 4} = 8$

(10) $\sqrt{6x + 1} + 9 = 16$

(11) $\sqrt{3n + 8} - 5 = 0$

(12) $\sqrt{4t - 7} + 4 = 1$

(13) $\sqrt{\frac{x}{6}} + 2 = 7$

(14) $\sqrt{\frac{2m}{3}} + 6 = 9$

(15) $\sqrt{x} = 7\sqrt{2}$

(16) $\sqrt{4y - 3} = \sqrt{41}$

(17) $\sqrt{5x - 7} = \sqrt{3x + 3}$

(18) $4\sqrt{a} = \sqrt{4a + 27}$

Answers for exercises 1–6:

TH 25	BE 16	IT no solution	CA 300
RE 45	RY 64	WI 35	TH 24

Answers for exercises 7–12:

HA 8	IS 28	US 12	AT $\frac{5}{3}$
SH $\frac{16}{5}$	TH no solution	LD 30	LL $\frac{17}{3}$

Answers for exercises 13–18:

OP $\frac{27}{2}$	EA 5	TH 98	AS 150
NK 32	DE $\frac{9}{4}$	SK 11	EY no solution

OBJECTIVE 3–p: To solve radical equations (solving a quadratic equation is not required).

What Is the Advantage of Having Nuclear Physics ?

Solve each equation and problem below. (Be sure to check each apparent solution in the original equation.) Find your answer and notice the two letters next to it. Write these letters in the two boxes above the exercise number at the bottom of the page.

(1) $\sqrt{\frac{x}{5}} + 4 = 14$

(2) $\sqrt{\frac{3a}{2}} - 1 = 5$

(3) $\sqrt{8y} = \frac{1}{2}$

(4) $\sqrt{3n} = \frac{2}{5}$

(5) The square root of one fourth of a number is 6. Find the number.

Answers:

AB	$\frac{8}{25}$	BE	24
ND	144	EN	180
AN	500	ET	28
EO	$\frac{4}{75}$	DY	$\frac{1}{32}$

(6) $\sqrt{5k + 2} + 8 = 11$

(7) $\sqrt{7d - 9} = \sqrt{2d + 21}$

(8) $\sqrt{x^2 + 3x} = 2$

(9) $\sqrt{3w + 10} - w = 0$

(10) When 11 is subtracted from twice a number, the square root of the result is 4. Find the number.

Answers:

ST	9	TH	$\{1, -4\}$
IT	6	IS	$\frac{27}{2}$
CL	5	AF	$\{2, -3\}$
CH	$\frac{13}{5}$	ER	$\frac{7}{5}$

(11) $\sqrt{x - 3} = x - 3$

(12) $x + 2 = \sqrt{18 - x}$

(13) $y = 5 + \sqrt{3y - 5}$

(14) $\sqrt{7m + 25} - m = 1$

(15) Three times the square root of a number is the same as 4 less than the number. Find the number.

Answers:

OU	8	FI	-7
ND	25	TH	$\{3, 4\}$
TT	10	LD	16
KI	2	AT	$\{5, -3\}$

7	10	2	13	6	11	1	8	4	15	9	14	3	12	5

OBJECTIVE 3–q: To solve radical equations and word problems that lead to radical equations (solving a quadratic equation may be required).