A.REI.B.4: Roots of Quadratics 1b

1 Given the equation $x^2 + 3x - 9 = 0$. What is the product of the roots?

2 What is the product of the roots of the equation $-2x^2 + 3x + 8 = 0$?

3 What is the product of the roots of the equation $2x^2 - 9x + 6 = 0$?

4 What is the product of the roots of the equation $2x^2 - x - 2 = 0$?

5 What is the product of the roots of $4x^2 - 5x = 3$?

6 What is the product of the roots of the quadratic equation $2x^2 - 7x = 5$?

7 What is the sum of the roots of the equation $2x^2 - 3x + 4 = 0$?

8 What is the sum of the roots of the equation $2x^2 - 13x + 17 = 0$?

9 What is the sum of the roots of the equation $2x^2 + 6x - 7 = 0$?

10 What is the sum of the roots of the equation $3x^2 - 2x + 5 = 0$?

11 What is the sum of the roots of the equation $2x^2 - 3x + 9 = 0$?

12 What is the sum of the roots of the equation $-3x^2 + 6x - 2 = 0$?

13 Find the sum of the roots of the equation $x^2 + 7x - 8 = 0$.

14 What are the sum and product of the roots of the equation $6x^2 - 4x - 12 = 0$?

15 What are the sum (S) and product (P) of the roots of the equation $2x^2 - 4x + 1 = 0$?

16 What are the sum (S) and product (P) of the roots of the equation $3x^2 - 7x + 12 = 0$?

17 Which statement about the equation $3x^2 + 9x - 12 = 0$ is true?
1) The product of the roots is −12.
2) The product of the roots is −4.
3) The sum of the roots is 3.
4) The sum of the roots is −9.

18 Find the sum and product of the roots of the equation $5x^2 + 11x - 3 = 0$.

19 Determine the sum and the product of the roots of the equation $12x^2 + x - 6 = 0$.

20 Determine the sum and the product of the roots of $3x^2 = 11x - 6$.

21 Given the equation $3x^2 + 2x + k = 0$, state the sum and product of the roots.

22 If the sum of the roots of $x^2 + 3x - 5 = 0$ is added to the product of its roots, the result is

23 If the sum of the roots of the equation $2x^2 - 5x - 3 = 0$ is added to the product of the roots, the result is

24 In the equation $x^2 - 7x + 2 = 0$, the sum of the roots exceeds the product of the roots by

25 What is the product of the roots of the quadratic equation $2x^2 - x = 4$?

A.REI.B.4: Roots of Quadratics 1b
Answer Section

1 ANS:
-9

REF: 088730siii
2 ANS:
-4

REF: 068733siii
3 ANS:
3

REF: 019523siii
4 ANS:
-1

REF: 019726siii
5 ANS:
$-\frac{3}{4}$

$\frac{c}{a} = \frac{-3}{4}$

REF: 011517a2 STA: A2.A.20
6 ANS:
$-\frac{5}{2}$

$2x^2 - 7x - 5 = 0$

$\frac{c}{a} = \frac{-5}{2}$

REF: 061414a2 STA: A2.A.20
7 ANS:
$\frac{3}{2}$

REF: 019424siii
8 ANS:
$\frac{13}{2}$

REF: 010429siii
9 ANS:
-3

REF: 069635siii

10 ANS:
$\frac{2}{3}$

REF: 080129siii
11 ANS:
$\frac{3}{2}$

REF: 089418siii
12 ANS:
2
$\frac{-b}{a} = \frac{-6}{-3} = 2$

REF: 011613a2 STA: A2.A.20
13 ANS:
-7

REF: 080210siii
14 ANS:
sum $= \frac{2}{3}$; product $= -2$
sum: $\frac{-b}{a} = \frac{4}{6} = \frac{2}{3}$. product: $\frac{c}{a} = \frac{-12}{6} = -2$

REF: 011209a2 STA: A2.A.20
15 ANS:
$S = 2, P = \frac{1}{2}$

REF: 069833siii
16 ANS:
$S = \frac{7}{3}, P = 4$

REF: 060133siii
17 ANS: 2
$P = \frac{c}{a} = \frac{-12}{3} = -4$

REF: 081506a2 STA: A2.A.20
18 ANS:
Sum $\frac{-b}{a} = -\frac{11}{5}$. Product $\frac{c}{a} = -\frac{3}{5}$

REF: 061030a2 STA: A2.A.20

19 ANS:

Sum $\frac{-b}{a} = -\frac{1}{12}$. Product $\frac{c}{a} = -\frac{1}{2}$

REF: 061328a2 STA: A2.A.20

20 ANS:

$3x^2 - 11x + 6 = 0$. Sum $\frac{-b}{a} = \frac{11}{3}$. Product $\frac{c}{a} = \frac{6}{3} = 2$

REF: 011329a2 STA: A2.A.20

21 ANS:

Sum $\frac{-b}{a} = \frac{-2}{3}$. Product $\frac{c}{a} = \frac{k}{3}$

REF: 061534a2 STA: A2.A.20

22 ANS:

–8

$-\frac{b}{a} = -\frac{3}{1}$. $\frac{c}{a} = \frac{-5}{1}$. $-3 + -5 = -8$

REF: 080217b

23 ANS:

1

REF: 069034siii

24 ANS:

5

REF: 060030siii

25 ANS:

–2

$2x^2 - x - 4 = 0$

$$\frac{c}{a} = \frac{-4}{2} = -2$$

REF: 081605a2 STA: A2.A.20