

10.27.15

Solve each equation. Check each answer by substituting the value(s) back into the equation.

$$\frac{k^2 + 5k + 6}{k^2 + 7k + 10} = \frac{3}{1}$$

$$3(k^2 + 7k + 10) = k^2 + 5k + 6$$

$$3k^2 + 21k + 30 = k^2 + 5k + 6$$

$$-k^2 - 5k - 6 - k^2 - 5k - 6$$

$$a=1 \quad b=8 \quad c=12$$

$$2k^2 + 16k + 24 = 0$$

$$2(k^2 + 8k + 12) = 0$$

$$ax^2 + bx + c$$

$$\begin{array}{r} a \cdot c \\ 12 \\ 6 \div 2 \\ + \\ 8 \\ b \end{array}$$

	k	6
k	k^2	$6k$
2	$2k$	12

$$2(k+6)(k+2) = 0$$

$$k+6=0 \quad k+2=0$$

$$k=-6 \quad k=-2$$

$$\frac{(-6)^2 + 5(-6) + 6}{(-6)^2 + 7(-6) + 10} = 3 \quad ? \quad \text{TRUE}$$

$$\frac{(-2)^2 + 5(-2) + 6}{(-2)^2 + 7(-2) + 10} = 3 \quad ? \quad \text{FALSE}$$

10.29.15

Solve each equation. Check each answer by substituting the value(s) back into the equation.

$$\frac{5}{2x-2} = \frac{15}{x^2-1}$$

$$5(x^2-1) = 15(2x-2)$$

$$5x^2 - 5 = 30x - 30$$

$$5x^2 + 0x - 5 = 30x - 30$$

$$5x^2 - 30x - 5 = -30$$

$$5x^2 - 30x + 25 = 0 \quad 5(x^2 - 6x + 5) = 0$$

a.c

$$\begin{array}{r} 5 \\ -5 \end{array} \cdot \begin{array}{r} -1 \\ 6 \end{array}$$

	x	-5
x	x^2	$-5x$
-1	$-1x$	5

$$5(x-1)(x-5) = 0$$

$$5 \neq 0 \quad x-1=0 \quad x-5=0$$

$$x=1 \quad \boxed{x=5}$$

$$\frac{5}{2(1)-2} = \frac{15}{(1)^2-1} \quad ? \text{ Undefined } \times$$

$$\frac{5}{2(5)-2} = \frac{15}{(5)^2-1} \quad ? \text{ True } \checkmark$$

11.2.15

Solve the equation. Check each answer by substituting the value(s) back into the equation.

$$\frac{4z^2 - 11z - 11}{z^2 - 3z - 4} = 2$$

$$2(z^2 - 3z - 4) = 4z^2 - 11z - 11$$

$$2z^2 - 6z - 8 = 4z^2 - 11z - 11$$

$$-2z^2 + 6z + 8 \quad -2z^2 + 6z + 8$$

$$0 = 2z^2 - 5z - 3$$

a.c

$$\begin{array}{r} -6 \\ -6 \cdot 1 \\ + \\ -5 \\ 6 \end{array}$$

	z	-3
$2z$	$2z^2$	$-6z$
1	$1z$	-3

$$(2z+1)(z-3)=0$$

$$2z+1=0$$

$$z-3=0$$

$$z = -\frac{1}{2}$$

TRUE

$$z = 3$$

TRUE

11.4.15

Solve the equation. Check each answer by substituting the value(s) back into the equation.

$$\frac{6m^2 + 22m + 16}{m^2 + 7m + 6} = 2$$

$$6m^2 + 22m + 16 = 2(m^2 + 7m + 6)$$

$$6m^2 + 22m + 16 = 2m^2 + 14m + 12$$

$$-2m^2 - 14m - 12 \quad -2m^2 - 14m - 12$$

$$4m^2 + 8m + 4 = 0$$

$$4(m^2 + 2m + 1) = 0$$

a.c

$$\begin{array}{c} 1 \\ \times \\ 1 \\ \hline 2 \\ 6 \end{array}$$

	m	1
m	m ²	1m
1	1m	1

$$4(m+1)(m+1) = 0$$

$$4 \neq 0 \quad m+1=0 \quad m+1=0$$

$$m=-1 \quad m=-1$$

undefined No solution

$$\frac{6(-1)^2 + 22(-1) + 16}{(-1)^2 + 7(-1) + 6} = 2$$