Topic: Multivariable equations

Question: Solve for z.

$$3y - 4x + 2z = 6$$

Answer choices:

$$A \qquad z = \frac{2}{6 + 2x - 3y}$$

$$B z = \frac{6 + 4x - 3y}{2}$$

C
$$z = x - 4$$

$$D z = 5 + x + 6y$$

Solution: B

We need to get z by itself on one side of the equation. Move the 3y first.

$$3y - 4x + 2z = 6$$

$$3y - 3y - 4x + 2z = 6 - 3y$$

$$-4x + 2z = 6 - 3y$$

Now move the -4x.

$$-4x + 4x + 2z = 6 + 4x - 3y$$

$$2z = 6 + 4x - 3y$$

Divide by 2 to solve for z.

$$\frac{2z}{2} = \frac{6 + 4x - 3y}{2}$$

$$z = \frac{6+4x-3y}{2}$$



Topic: Multivariable equations

Question: Solve for z.

$$2y - 3x - z = 7x$$

Answer choices:

$$A z = 10x + 2y$$

$$B z = 10x - 2y$$

$$C z = 2y - 10x$$

$$D z = -10x - 2y$$

Solution: C

We need to get z by itself on one side of the equation. Move the -3x first.

$$2y - 3x - z = 7x$$

$$2y - 3x + 3x - z = 7x + 3x$$

$$2y - z = 10x$$

Now move the 2y.

$$2y - 2y - z = 10x - 2y$$

$$-z = 10x - 2y$$

Multiply by -1.

$$(-z)(-1) = (10x - 2y)(-1)$$

$$z = -10x + 2y$$

$$z = 2y - 10x$$

Topic: Multivariable equations

Question: Solve for z.

$$3x - y + 2z = 12$$

Answer choices:

$$\mathbf{A} \qquad \frac{12 - 3x + y}{2}$$

C
$$12 - 3x + y$$

D
$$12 + 3x - y$$



Solution: A

Move the 3x and the -y.

$$3x - y + 2z = 12$$

$$3x - y + 2z - 3x + y = 12 - 3x + y$$

$$2z = 12 - 3x + y$$

Divide both sides by 2.

$$z = \frac{12 - 3x + y}{2}$$

