1. Read the equation. *If the equation involves subtraction, re-write it using a related addition expression.* If not, go to step 2.

a. **-2x – 4 = 8**
-2*x* + ___ = 1

b. $\frac{r}{5}$ **+ 2 = 6**
No subtraction here

2. The equation is made of two equivalent expressions. Look for the expression that has the variable in it. Tell what operation(s) have been done to the variable expression. (+, –, x, ÷)

a. **-2x + (-4) = 8**
___ was added, and *X* was multiplied by ___

b. $\frac{r}{5}$ **+ 2 = 6**
___ was added, and r was divided by ___

3. Begin isolating the variable by adding the opposite number. *First undo addition. Remember*, to keep balance you must do this with the expression on the left and on the right of =.

a. **-2x + (-4) = 8**
___ ___
-2x = ___

b. $\frac{r}{5}$ **+ 2 = 6**
+___ +___
$\frac{r}{5}$ **= ___**

4. Next, use inverse operations to isolate the variable by *undoing any multiplication or division*. *Remember*, to keep balance you must do this with the expression on the left and on the right of =.

a. **-2 *x* = 12**
X **= ___**

b. **__ • $\frac{r}{5}$ = 4 • __**
r = ___

5. When the variable is completely isolated, you have solved the equation.
Check: Substitute the value of the variable in the original equation to make sure the two expressions are equal.

b. **-2x – 4 = 8**
-2___ – 4 = 8
12 – 4 = 8

c. $\frac{r}{5}$ **+ 2 = 6**
$\frac{\_\_\_}{5}$ + 2 = 6

1. Read the equation. *If the equation involves subtraction, re-write it using a related addition expression.* If not, go to step 2.

a. **-2x – 4 = 8**
-2*x* + ___ = 1

b. $\frac{r}{5}$ **+ 2 = 6**
No subtraction here

2. The equation is made of two equivalent expressions. Look for the expression that has the variable in it. Tell what operation(s) have been done to the variable expression. (+, –, x, ÷)

a. **-2x + (-4) = 8**
___ was added, and *X* was multiplied by ___

b. $\frac{r}{5}$ **+ 2 = 6**
___ was added, and r was divided by ___

3. Begin isolating the variable by adding the opposite number. *First undo addition. Remember*, to keep balance you must do this with the expression on the left and on the right of =.

a. **-2x + (-4) = 8**
___ ___
-2x = ___

b. $\frac{r}{5}$ **+ 2 = 6**
+___ +___
$\frac{r}{5}$ **= ___**

4. Next, use inverse operations to isolate the variable by *undoing any multiplication or division*. *Remember*, to keep balance you must do this with the expression on the left and on the right of =.

a. **-2 *x* = 12**
X **= ___**

b. **__ • $\frac{r}{5}$ = 4 • __**
r = ___

5. When the variable is completely isolated, you have solved the equation.
Check: Substitute the value of the variable in the original equation to make sure the two expressions are equal.

b. **-2x – 4 = 8**
-2___ – 4 = 8
12 – 4 = 8

c. $\frac{r}{5}$ **+ 2 = 6**
$\frac{\_\_\_}{5}$ + 2 = 6

Solving Two-Step Equations

Solving Two-Step Equations

1. Read the equation. *If the equation involves subtraction, re-write it using a related addition expression.* If not, go to step 2.

a. **-2x – 4 = 8**

-2*x* + -4 = 1

b. $\frac{r}{5}$ **+ 2 = 6**

No subtraction here

2. The equation is made of two equivalent expressions. Look for the expression that has the variable in it. Tell what operation(s) have been done to the variable expression. (+, –, x, ÷)

a. **-2x + (-4) = 8**

-4 was added, and *X* was multiplied by -2

b. $\frac{r}{5}$ **+ 2 = 6**

2 was added, and r was divided by 5

3. Begin isolating the variable by adding the opposite number. *First undo addition. Remember*, to keep balance you must do this with the expression on the left and on the right of =.

a. **-2x + (-4) = 8**

4 4

-2x = 12

b. $\frac{r}{5}$ **+ 2 = 6**

+ -2 + -2

$\frac{r}{5}$ **= 4**

4. Next, use inverse operations to isolate the variable by *undoing any multiplication or division*. *Remember*, to keep balance you must do this with the expression on the left and on the right of =.

a. **-2 *x* = 12**

***X* = -6**

b. 5 • $\frac{r}{5}$ **= 4 •** 5

r = 20

5. When the variable is completely isolated, you have solved the equation.
Check: Substitute the value of the variable in the original equation to make sure the two expressions are equal.

b. **-2x – 4 = 8**

-2• -6 – 4 = 8

12 – 4 = 8

c. $\frac{r}{5}$ **+ 2 = 6**

$\frac{20}{5}$ + 2 = 6