6.EE.4: Worksheet

Solutions

1. Are $12 + 4s$ and $4(s + 3)$ equivalent expressions?

   Yes.

2. Are $2x^2 + x - x$ and $x^2 + x$ equivalent expressions?

   No.

3. Are $8(b - b)$ and 1 equivalent expressions?

   No.

4. Are $4(x + 2y + 1)$ and $2(2x + 4y) + 4$ equivalent expressions?

   Yes.

5. Of the following expressions, which are equivalent?

   $18 + 36y + 9$
   $9(4y + 4)$
   $36y$
   $36y + 1$
   $4(9y + 3) + 18$
   $18(1 + y) + 9(1 + y)$

   The equivalent expressions are $18+36y+9$, $9(4y+4)$, and $18(1 + y) + 9(1 + y)$.

6. Are $v - 18$ and $w - 18$ equivalent expressions? Why or why not?

   No, they are not equivalent expressions because the two variables are different.

7. Of the following expressions, which are equivalent?

   $b + 1 - b + 2b + b$
   $14b + 2$
   $3b + 1$
   $2(7b + 1)$
   $b(1 + 1 + 1) + 1$
   $7(2b + 1)$

   The expressions $b + 1 - b + 2b + b$, $3b + 1$, and $b(1 + 1 + 1) + 1$ are equivalent, and the expressions $14b + 2$ and $2(7b + 1)$ are equivalent.

8. Show that $x^2 + 2$ and $x \times x + 1 + 1$ are equivalent by plugging in values for x.

   Answers may vary.

9. Show that $14m + 16m$, $30m$, and $2m(7 + 8)$ are equivalent by plugging in values for m.

   Answers may vary.

10. Expression #1 gives a value of 4 when we plug in $x = 1$. Expression #2 gives a value of 4 when we plug in $x = 1$. Is it possible for these two expressions to be equivalent? Why or why not?

    Yes, it is possible for these two expressions to be equivalent. Both expressions could be equivalent to 4 (such as $4 + x - x$ or $3 + x^0$), which means that no matter what value of x we plug in, the expressions will result in the same value and be equivalent.