

Simplify the following:

1) $4(5x+2) - 7x$
 $4 \cdot 5x = 20x$
 $4 \cdot 2 = 8$
 $20x + 8 - 7x$

x	#
20x	8
-7x	
13x + 8	

2) $-5 + 2(12 - 3x)$
 $2 \cdot 12 = 24$
 $2 \cdot -3x = -6x$
 $-6x + 24 - 5$

x	#
-6x	24
	-5
-6x + 19	

3) $(7x - 6) - (5x - 8)$
 $7x - 6 - 5x + 8$

x	#
7x	-6
-5x	8
2x + 2	

4) $3x - 2(4x - 12)$
 $-2 \cdot 4x = -8x$
 $-2 \cdot -12 = 24$
 $-8x + 24 + 3x$

x	#
-8x	24
3x	
-5x + 24	

5) $(-10x + 35) + (14x - 20)$

x	#
-10x	35
14x	-20
4x + 15	

6) $\frac{1}{3}(24v - 15) - 30v$
 $\frac{1}{3} \cdot 24v = 8v$
 $\frac{1}{3} \cdot -15 = -5$
 $8v - 5 - 30v$

v	#
8v	-5
-30v	
-22v - 5	

Factor the following expressions using the greatest common factor.

8) $4x - 8$ GCF = 4
4(x - 2)

9) $14x + 35$ GCF = 7
7(2x + 5)

10) $15x - 29$ GCF = 1
Prime

Determine if the following expressions are equivalent. Explain how you know.

11) $15x - 9$ and $3(5x - 3)$
 GCF = 3
 $3(5x - 3)$
 yes because
 $3(5x - 3) = 3(5x - 3)$

12) $12x + 15$ and $4x + 5 - 16x + 10$

x	#
4x	5
-16x	10
-12x + 15	

No. Because $12x + 15 \neq -12x + 15$

13) $-3x + 12 - (-x + 2)$ and $-2(x - 5)$
 $-3x + 12 + x - 2$ $-2x + 10$

x	#
-3x	12
1x	-2
-2x + 10	

yes because
 $-2x + 10 = -2x + 10$