

Deliverable ID: Fill in the blank

Standard:	HSA.REI.B.3
Unpacked standard alignment:	Solve a multi-step linear inequality with variables on one side.
DOK:	3
Revised Bloom's level – Cognitive Process Dimension:	Understanding
TEI type:	Fill in the Blank
Functionality notes:	

Item Stem:

An inequality is shown below, where k is a real number.

$$-34(8x+k)+8x-1>17$$

For what value of k will the solution to this inequality be $x>15$?

k= _____

Key: 16

Rationale:

Applying the Distributive Property to $-34(8x+k)+8x-1>17$ results in $-6x-34k+8x-1>17$.

Combining like terms results in $2x-34k-1>17$.

Isolating the variable term results in $2x>18+34k$.

Dividing both sides by 2 results in $x>9+38k$.

Because the solution to the inequality must be $x>15$, it follows that $9+38k=15$. Solving this equation results in $k=16$.