1.3

SOLVING EQUATIONS WITH VARIABLES ON BOTH SIDES

DO NOW

Solve the equation. Check your solution.

1) $\frac{g}{5} - 7 = 12$

DO NOW

Solve the equation. Check your solution.

2) $2x + 3x - 5 = 25$

DO NOW

Solve the equation. Check your solution.

3) $3(x-6)+10=16$

DO NOW

Solve the equation. Check your solution.

4) $2(1-5x)+4=-8$

Examples

1) Cancel the “smallest variable term”
2) Collect constant terms on the other side

$a)\ 13+5x=2x-8$

$b)\ 2m-6=12-4m$

$c)\quad 34-3x=14x$

Practice

1) $7-8x=4x-17$

2) $9-3k=17-2k$

Multi-step with variables on each side of the equation

1) Simplify each side of the equation
2) Collect variable terms on one side
3) Collect constant terms on the other side

$a)\ 3-4y=5(y-3)$

$b)\ 3z-10+4z=5z-7$

Classwork

1) $y = 24 - 3y$

Classwork

2) $-7a = -12a - 65$

Classwork

3) $7(a-2)=3a+14$

Classwork

4) $4(r-9)+2=12r+14$

Classwork

5) $5(2+n)=3(n+6)$

Classwork

6) $3(2+v)-4v=v+16$

No Solution vs Infinitely Many

An equation has **NO SOLUTION**:
if once you solve, one side can NOT be equal to the other side...

An equation is has **INFINITELY MANY SOLUTIONS**:
if once you solve, one side is ALWAYS equal to the other side...

Examples

$a)\ 13+x=2x-8$

$b)\quad 2m-6=-6+2m$

$c)\quad 3x = 3(x + 4)$