3.5

Solving Two-Step Equations

One-Step Equation Review

1) $m + 9 = 3$

2) $m - 3 = -5$

3) $-3a = -18$

4) $\frac{x}{-5} = -2$

Two-Step Equation Procedures

It takes two steps to solve an equation that has more than one operation.

Use PEMDAS backwards

1. **Cancel by using the addition or subtraction property of equality. (use the inverse of addition or subtraction)**

2. **Cancel further by using the multiplication or division property of equality. (use the inverse of multiplication or division)**

Solving Two-Step Equations

a) $2x - 15 = 5$

1. Cancel addition or subtraction
2. Cancel multiplication or division

Solving Two-Step Equations

$$\boldsymbol{b)}\ 11\boldsymbol{n}+1=67$$

1. Cancel addition or subtraction
2. Cancel multiplication or division

Solving Two-Step Equations

$c)\ -2y+4=8$

1. Cancel addition or subtraction
2. Cancel multiplication or division

Solving Two-Step Equations

$d)\ 5x - 2 = 3$

1. Cancel addition or subtraction
2. Cancel multiplication or division

Solving Two-Step Equations

$$e) \quad \frac{x}{5} - 9 = -2$$

1. Cancel addition or subtraction
2. Cancel multiplication or division

Solving Two-Step Equation Word Problems

f) Bobby bought 3 T-shirts at the mall and a pair of pants for $16 at the clothing store. All together he spent $28 for the clothes. How much was each shirt?

Solving Two-Step Equation Word Problems

g) Diane sold 9 decorated flowers that cost the same amount each plus a dozen roses for $28. All together she sold $73 in flowers. How much was each decorated flower?

Summary

Remember, use inverse operations to solve equations.

Work in reverse order of operations.

Practice

1) $5x + 4 = 19$

2) $2t + 7 = -1$

Practice

3) $\frac{x}{-5} + 4 = -2$

4) $-7t + 3 = -25$

Solving Two-Step Equation Word Revisited

h) $5(x-4)=15$

Solving Two-Step Equation Word Revisited

$$i)\ -4(m+3)=24$$

Solving Two-Step Equation Word Revisited

$$j)\ \frac{x}{8} - \frac{1}{2} = -\frac{7}{2}$$

Solving Two-Step Equation Word Revisited

$$k)\ \frac{2}{5} + 4a = -\frac{6}{5}$$

Combining Like Terms Before Solving

$l)\quad 3y-8y=25$

Combining Like Terms Before Solving

$m)\quad 7x - 10x = -27$