

Equation Solving Examples

Ex 1  $\frac{\cancel{5}c}{\cancel{5}} = \frac{-50}{5}$   
 $c = -10$

- dividing 5c by 5 "cancels" it out

Ex 2  $\frac{\cancel{-9}z}{\cancel{-9}} = \frac{45}{-9}$   
 $z = -5$

- do the same on each side of =

Ex 3  $3x + 2^{-2} = 5^{-2}$   
 $\frac{\cancel{3}x}{\cancel{3}} = \frac{3}{3}$   
 $x = 1$

- z and c are variables → "isolate" the variable

Ex 4  $2b + 8^{-8} = 22^{-8}$

$\frac{\cancel{2}b}{\cancel{2}} = \frac{14}{2}$   
 $b = 7$

step 1

step 2

Ex 5  $3y - 2^{+2} = 4 + 2$   
 $\frac{3y}{3} = \frac{6}{3}$   
 $y = 2$

Ex 6  $3b - 5^{+5} = 22 + 5$   
 $\frac{3b}{3} = \frac{27}{3}$   
 $b = 9$

TEST Ex 7  
 $2 \times 5$   
 $10 + 4$   
 $= 14$   
Wrong!

$2x - (-4) = -14$   
 $2x + 4 = -14$   
 $\frac{2x}{2} = \frac{10}{2}$

- deal with brackets first
- rewrite

~~$x = 5$~~   $x = -9$

This was a 3 step!

$$\text{Ex 8} \quad 3x + (-8) = -29$$

Test

$$3x - 7$$

$$-21 - 8 = -29$$

✓

$$3x - 8 = -29$$

$$\frac{3x}{3} = \frac{-21}{3}$$

$$x = -7$$

$$\text{Ex 9} \quad \cancel{8} \cdot \frac{b}{\cancel{8}} = 2 \cdot 8$$

$$b = 16$$

• multiply both sides to get variable by itself.

$$\text{Ex 10} \quad \cancel{12} \cdot \frac{b}{\cancel{12}} = 6(12)$$

$$b = 72$$

EX 11

$$\cancel{a} \cdot \frac{16}{\cancel{a}} = 4 \cdot a$$

variable →  
is on  
the bottom

$$16 = 4a$$

$$\frac{16}{4} = \frac{4a}{4}$$

$$\frac{16}{4} = \frac{4a}{4}$$

$$4 = a$$

$$a = 4 \text{ better?}$$

• multiply  
by the  
variable  
both  
the same

EX 12

$$\cancel{c} \cdot \frac{-48}{\cancel{c}} = 6 \cdot c$$

$$\frac{-48}{6} = \frac{6c}{6}$$

$$c = -8$$