

BE-1A TUESDAY 11-27-07

① Simplify: $\frac{1}{7}(49x + 70)$

② Solve:

$$4(2x - 8) = \frac{1}{7}(49x + 70)$$

• TAKE OUT homework: Pg. 152 #16-21

BE is EXAMPLE 2, Page 150
using x instead of r .

When SOLVING EQUATIONS THERE ARE
2 special cases you need to be
able to handle. In both cases.
the VARIABLE "Goes Away"! wheee...

First Special Case $\Rightarrow$ No Solution

EX 3
pg 150

$$2m + 5 = 5(m - 7) - 3m$$

$$2m + 5 = 5m - 35 - 3m$$

$$\begin{array}{rcl} 2m + 5 & = & 2m - 35 \\ -2m & & -2m \end{array}$$

$$\boxed{5 = -35}$$

FALSE

VARIABLE GOES
AWAY BUT FALSE
STATEMENT IS LEFT.

SINCE, NO MATTER WHAT VALUE m IS,
 $5 = -35$ will always be false, the
solution, which is by definition the
values of m which make a true
statement is $\boxed{\{ \text{No solution} \}}$

Second Special Case $\Rightarrow$ All Real Numbers

EX 4
PG 151

$$3(r+1) - 5 = 3r - 2$$

$$3r + 3 - 5 = 3r - 2$$

$\downarrow \downarrow$

$$3r - 2 = 3r - 2$$

$-3r$

$-3r$

$$\boxed{-2 = -2}$$

TRUE

VARIABLE GOES
AWAY BUT TRUE
Statement is
Left.

No matter what value r is, $-2 = -2$
is ALWAYS true. So the solution

is: $\{\text{ALL REAL NUMBERS}\}$

or, if you are mathematically cool,
 $\{\text{All } R\}$

A classic type of Algebra problem
you can now setup and solve:

Ⓔ Find 4 consecutive odd integers
whose sum is 8

consecutive $\Rightarrow$ in order, no missing
numbers e.g. 3, 5, 7, 9

integers $\Rightarrow \{ \dots -3, -2, -1, 0, 1, 2, 3, \dots \}$

sum $\Rightarrow$ add e.g. $3 + 5 + 7 + 9$

Let d be the first (smallest)
of the 4 odd integers

$d + 2$ is next

$d + 4$ is next

$d + 6$ is last

$$d + d + 2 + d + 4 + d + 6 = 8$$

$$\begin{array}{r} 4d + 12 = 8 \\ -12 \quad -12 \end{array}$$

$$\frac{4d}{4} = \frac{-4}{4}$$

$$d = -1 \quad \therefore \boxed{-1, 1, 3, 5}$$

Homework / classwork:

Page 152 # 22 to 29

Page 146 # 46

Note:

- Consecutive odd integers: $d, d+2, d+4, \dots$
- Consecutive even integers: $E, E+2, E+4, \dots$
- consecutive integers: $N, N+1, N+2, \dots$