W-A1 Algebra 1 11/17

1.) $8(8+5m) = 4(m-2)$

$64 + 40m = \cancel{4m} - 8$

$\quad -4m \quad -\cancel{4m}$

$64 + 36m = -8$

$-64 \qquad -64$

$\frac{36m}{36} = \frac{-72}{36}$ $\boxed{m=-2}$

2.) $3 + 5(5-3b) = -5 + 3(4b+2)$

$3 + 25 - 15b = -5 + 12b + 6$

$28 - 15b = 12b + 1$

$+15b \quad +15b$

$28 = 27b + 1$

$-1 \qquad -1$

$\frac{27}{27} = \frac{27b}{27}$ $\boxed{b=1}$

3.) $-8a + 7(a-5) = -3(7-2a)$

$-8a + 7a - 35 = -21 + 6a$

$-a - 35 = -21 + 6a$

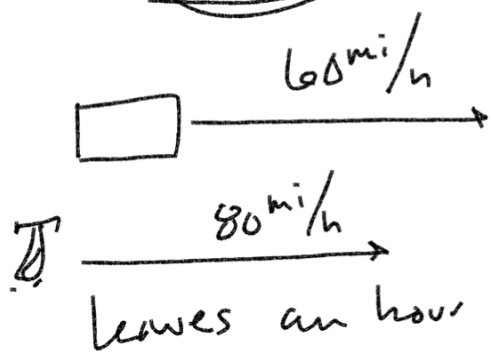
$+a \qquad +a$

$-35 = -21 + 7a$

$+21 \quad +21$

$\frac{-14}{7} = \frac{7a}{7}$ $\boxed{a=-2}$

A train leaves the station traveling 60 mi/h. A scooter leaves the same station traveling 80 mi/h one hour later. How long (time) until the scooter catches the train?



$D = RT$

distance = rate * time

Train	Scooter
$D = RT$	$D = RT$

$R_T T_T = R_S T_S$

time of train

$60t = 80(t-1)$

or

$60(t+1) = 80t$

time of scooter

$60(t+1) = 80t$

$60t + 60 = 80t$

$-60t \qquad -60t$

$\frac{60}{20} = \frac{20t}{20}$

$\boxed{3 = t}$

Roller SkNate travels at $\underline{180\ mi/hr}$
object rate of speed (mi/hr)

J. Skllama traveling at $\underline{220\ mi/hr}$
object rate of speed (mi/hr)

Leaves after $\underline{6}$ hr in the
time (hrs)

same direction. How long until they crash.

Relative Rate

What is the head start $(6\,hrs)(180\ mi/hr)$
1,080 miles

Every hr J. Skllama Gains $(220-180) = 40\ mi$

$$\frac{1080}{40} = 27\ hr$$

Dist SkNate Dist J. Skllama

$$180(t+6) = 220t$$

$$180t + 1080 = 220t$$
$$-180t \qquad -180t$$

$$\frac{1080}{40} = \frac{40t}{40} \qquad t = \frac{1080}{40}$$

$$\boxed{=27}$$

Tawny the Barbie Horse travels 50 mi/hr east while
obj mi/hr

Granny Gigi travels 300 mi/hr west.
obj mi/hr

How long until they are

1400 miles from each other
miles

opposite directions mean you add

300 + 50 = 350

$$\frac{1400}{350} = \boxed{4 \text{ hr}}$$