

2.4 Review

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

$$16a + 24 = -10a + 4$$

+10a                      +10a

$$26a + 24 = 4$$

-24    -24

$$\frac{26a}{26} = \frac{-20}{26}$$

$$a = \frac{-20}{26} \div 2 = \left(\frac{-10}{13}\right)$$

$$2(3a-4) + 8 = 4(a-6)$$

$$6a - 8 + 8 = 4a - 24$$

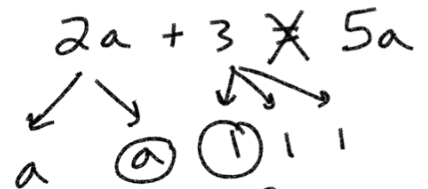
$$\rightarrow 6a = 4a - 24$$

-4a                      -4a

$$\frac{2a}{2} = \frac{-24}{2}$$

$$a = -12$$

$$12 - 3(4x - 8) = 6(3x + 2) - 2x$$



$$3[2 \text{ (house icon)}] + 3 \text{ (cup icon)}$$



Anal Ori  
(0,0)  
m  
1 2

- Distribute
- Combine
- Solve

- ✓ Distribute
- ✓ Combine Like Terms
- ✓ Solve

$$12(-3)(4x-8) = 6(3x+2) - 2x$$

Distribute  
Combine

$$12 - 3(4x + (-8))$$

$$(12) - 12x + (24) = 18x + 12 - 2x$$

$$12 + 24 - 12x = 16x + 12$$

$$36 - 12x = 16x + 12$$

$$-16x = -16x$$

$$\cancel{36} - 28x = 12$$

$$(x) = \#$$

$$-36$$

$$\frac{-28x}{-28} = \frac{-24}{-28}$$

$$x = \frac{24 \div 4}{28 \div 4} = \boxed{\frac{6}{7}}$$

## 2-5 Relative Rates

Colten stole Nate's self-respect and ran east at  $30 \text{ mi/h}$ . Not noticing anything was missing for a while, Nate chased him 30 mins later at  $35 \text{ mi/h}$ . How long until Nate catches Colten.

Relative Rate

$\xrightarrow{35 \text{ mi/h}}$      $\xrightarrow{30 \text{ mi/h}}$      $\xrightarrow{\text{opp} \rightarrow \text{add}}$   
 $\xrightarrow{\quad \quad \quad}$      $\xrightarrow{\quad \quad \quad}$      $\xrightarrow{\quad \quad \quad}$

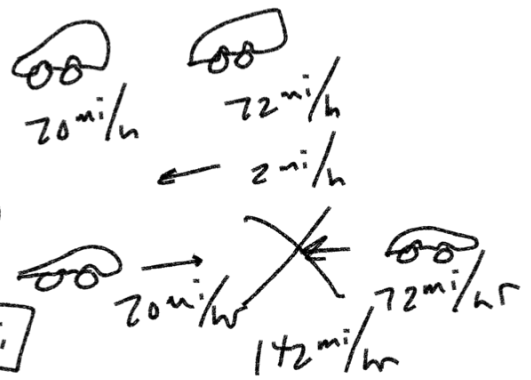
$5 \text{ mi/h}$

Head start

time: 30 min

$0.5 \text{ hr}$

distance:  $(0.5)(30) = 15 \text{ mi}$



Head Start (length)

$\frac{15 \text{ mi}}{5 \text{ mi/hr}}$

$3 \text{ hr}$

Relative Rate

$D = rt$   
"catch up"

$D = D$

$r_{\text{slow}} (t + \text{head start time}) = r_{\text{fast}} t$

$30(t + 0.5) = 35t$

$30t + 15 = 35t$   
 $-30t \quad \quad -30t$

head start length  
relative rate

$\frac{15}{5} = \frac{5t}{5}$

$3 = t$

Not wanting to miss out, Sky begins chasing Nate on rocket wheelies going 45 mi/h. How long will it take Sky to catch Nate if he is going 35 mi/h with an hour head start?

Relative Rate

Equation

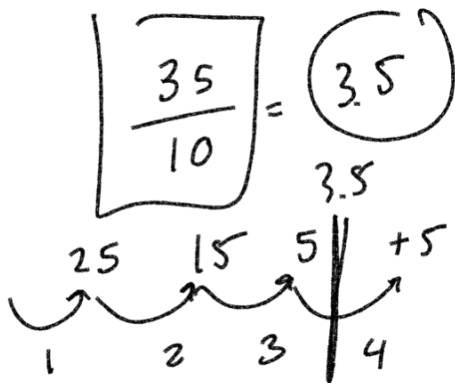
Sky relative rate  $45 - 35 = 10$   
 Head start time 1 hr  
 length 35 mi.

$$r_{\text{slow}}(t+1) = r_{\text{fast}}t$$

$$35(t+1) = 45t$$

$$35t + 35 = 45t$$

$$\begin{array}{r} -35t \\ \hline 35 = 10t \\ \frac{35}{10} = \frac{10t}{10} \\ t = \frac{35}{10} = 3.5 \end{array}$$



Quiz a  
 due soon  
 Quiz 10  
 due next week

HW  
 Supplemental (2.4)  
 2.4 evens  
 2.5 evens  
 Online HW 11 (Tonight)  
 Quiz 11 (Tonight)  
 due Dec 1st

