HW: 2.9/5, 14, 20, 21

Warm up:

$d = rt$

1) How long does it take a train traveling 42mi/h to go 714 miles?

$\frac{714}{42} = 17h$

$\frac{714}{42} = \frac{42t}{42}$

$17 = t$

2) A plane traveled 2856mi in 8 hours. What was the average speed for the trip?

$\frac{2856}{8} = 357 mi/h$

$\frac{2856}{8} = \frac{r(8)}{8}$

15

	Aug	Sept
C	$2d$	$2d-5$
D	d	$d+3$

$2d-5=d+3$

$-d+5 \quad -d+5$

$d=8$

David → 8 cars

Chris → 16 cars

(14) $a\left(\frac{b}{a}\right) = (c)a$

$\frac{b}{c} = \frac{ca}{c}$

$\frac{b}{c} = a \; ; c \neq 0$

$$-5\left(-\frac{w}{5}+8\right)=(22)(-5)$$

$$w-40=-110$$

$$+40 \quad +40$$

$$w=-70$$

(8) $(|e| - 8) + 15 = 7$

$-15 \quad -15$

$|e| - 8 + 15 = 7$

$|e| + 7 = 7$

$-7 \quad -7$

$|e| = 0$

$e = 0$

$|e| - 8 = -8$

$+8 \quad +8$

$|e| = 0$

$e = 0$

11) $2\left(\frac{5+7y}{2}\right)=(27)2$

$5+7y=54$

$-5 \quad -5$

$\frac{7y}{7}=\frac{49}{7}$

$y=7$

(12) $2 - 3(4x - 5) + 2(2x + 1) = 9x + 2$

9. $(c+3)-2c\div(1-3c)=2$

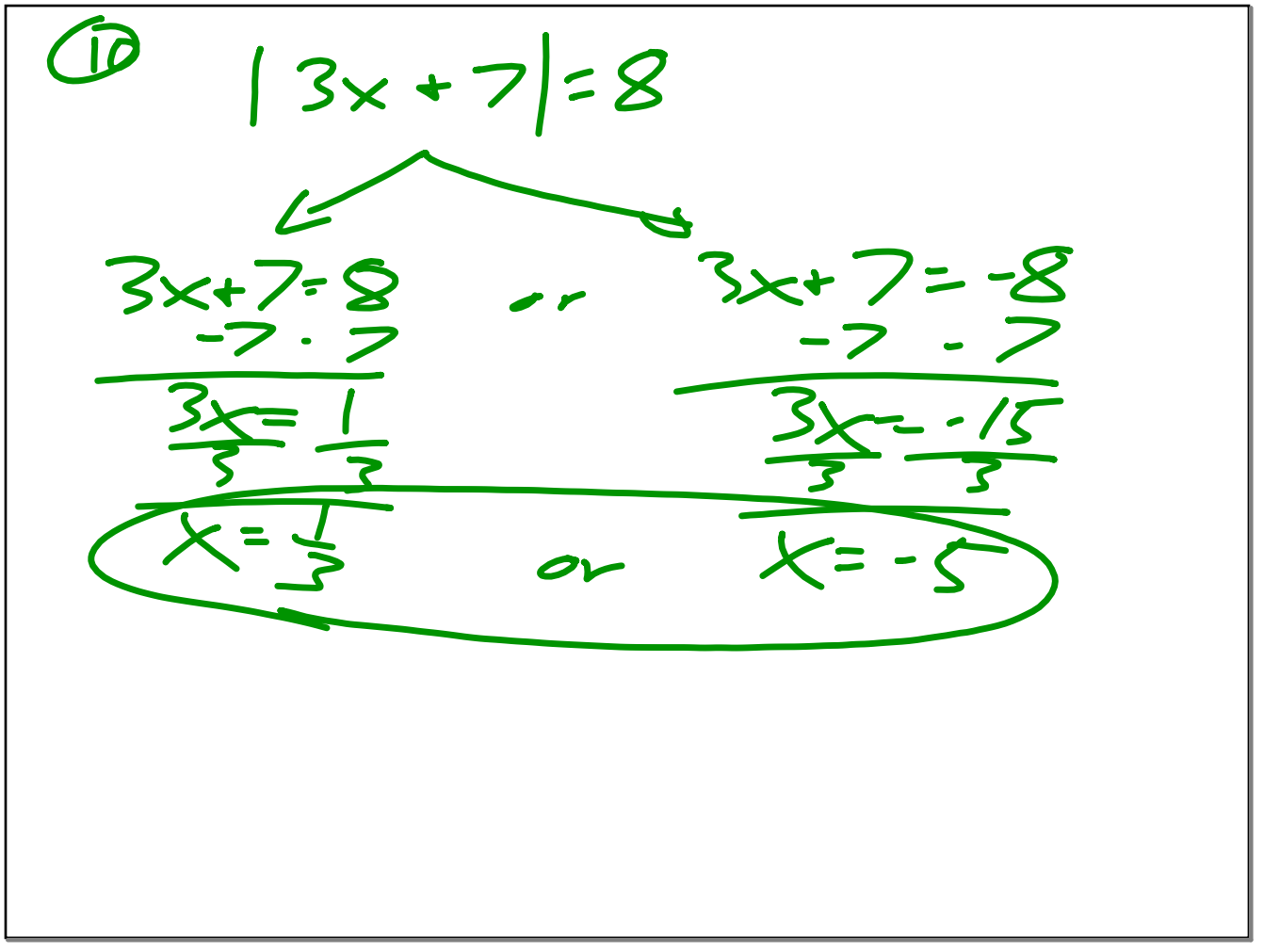
$c+3-2c-1+3c=2$

$2c+2=2$

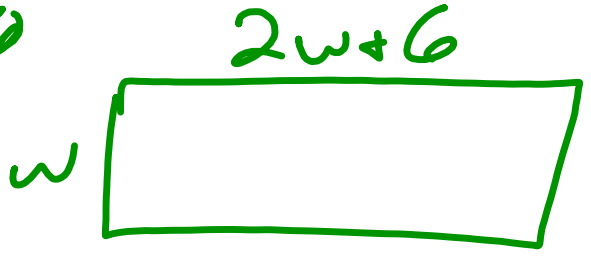
$-2 \quad -2$

$\frac{2c}{2}=\frac{0}{2}$

$c=0$


10
|3x + 7| = 8
3x + 7 = 8
-7 -7
3x = 1
3 3
x = 1/3
or
3x + 7 = -8
-7 -7
3x = -15
3 3
x = -5

(16)



$w + 2w + 6 + w + 2w + 6 = 138$

$6w + 12 = 138$

$-12 \quad -12$

$\frac{6w}{6} = \frac{126}{6}$

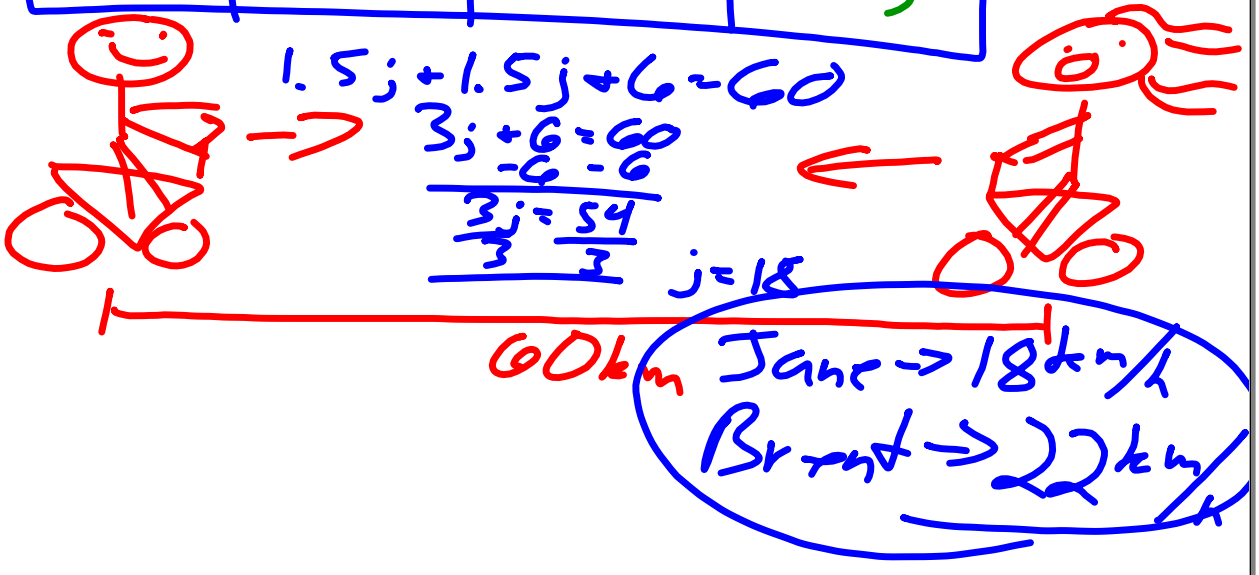
$w = 21$

21 cm x 48 cm

Bicyclists Brent and Jane started at noon from points 60km apart and rode towards each other, meeting at 1:30PM. Brent's speed was 4km/h greater than Jane's speed. Find their speeds.

	r	×	t	=	d
Brent	$j+4$		1.5		$1.5j+6$
Jane	j		1.5		$1.5j$

$d = rt$



30 minutes is the same as how many hours?

$\frac{30}{60} = \frac{1}{2}$

15 minutes?

$\frac{1}{4}$

20 minutes?

$\frac{1}{3}$

45 minutes?

$\frac{3}{4}$

50 minutes?

$\frac{50}{60} = \frac{5}{6}$

47 min

$\frac{47}{60}$

A helicopter leaves Central Airport and flies north at 180mi/h. Twenty minutes later a plane leaves the airport and follows the helicopter at 330mi/h. How long does it take the plane to overtake the helicopter?

$\frac{330}{1} \cdot \frac{1}{3}$

$\frac{330}{3}$

	r	t	d
H	180	t	$180t$
P	330	$t-\frac{1}{3}$	$330t-110$

$\frac{11}{15} \cdot 60$

$\frac{11}{15} = \frac{44}{60}$

44 min

$330t-110=180t$

$-330t \quad -330t$

$-110 = -150t$

$\frac{-110}{-150} = \frac{-150t}{-150}$

$\frac{11}{15} = t$

A ski lift carried Maria up a slope at a rate of 6km/h and she skied back down parallel to the lift at 34km/h. The round trip took 30min. How far did she ski and for how long?

	r	t	d
up	6	$\frac{1}{3}-d$	$3-6d$
down	34	d	$34d$

$3-6d=34d$

$+6d \quad +6d$

$\frac{3}{40}=\frac{40d}{40}$

$d=\frac{3}{40}$

$34\left(\frac{3}{40}\right)=\frac{102}{40}$

2.55 km

$\frac{3}{40}\cdot 60=\frac{180}{40}=4.5$

4.5 min

October 25, 2021

1) At noon a private plane left Austin for Los Angeles, 2100km away, flying at 500km/h. One hour later a jet left Los Angeles for Austin at 700km/h. At what time did they pass each other?

2) At 8:00AM the Smiths left a campground, driving at 48mi/h. At 8:20AM the Garcias left the same campground and followed the same route, driving at 60mi/h. At what time did they overtake the Smiths?

3) Kwan hiked up a hill at 4km/h and back down at 6km/h. His total hiking time was 3h. How long did the trip up the hill take him?

4) Jenny had driven for 2h at a constant speed when road repairs forced her to reduce her speed by 10mi/h for the remaining 1h of her 152mi trip. Find her original speed.

1) At noon a private plane left Austin for Los Angeles, 2100km away, flying at 500km/h. One hour later a jet left Los Angeles for Austin at 700km/h. At what time did they pass each other?

	r	t	d
P	500	p	500p
J	700	p-1	700p-700

$500p + 700p - 700 = 2100$

$+700 \quad +700$

$1200p = 2800$

$\frac{1200p}{1200} = \frac{2800}{1200}$

$p = \frac{28}{12} = \frac{7}{3} = 2\frac{1}{3}$

2:20pm

2) At 8:00AM the Smiths left a campground, driving at 48mi/h. At 8:20AM the Garcias left the same campground and followed the same route, driving at 60mi/h. At what time did they overtake the Smiths?

	r	t	d
S	48	s	$48s$
G	60	$s-\frac{1}{3}$	$60s-20$

$48s = 60s - 20$

$-60s \quad -60s$

$\frac{-12s}{-12} = \frac{-20}{-12}$

$s = \frac{5}{3} = 1\frac{2}{3}$

9:40am

3) Kwan hiked up a hill at 4km/h and back down at 6km/h. His total hiking time was 3h. How long did the trip up the hill take him?

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