9-9-13

Sec 2.2

CLEAR FRACTIONS

(63) $\frac{2}{3} + \frac{1}{4}t = 2$

LCD = 12 $\frac{2}{3} + \frac{t}{4} = \frac{2}{1}$

= LCM of denominator

LCM = smallest # they all divide into.

$12 \cdot \left(\frac{2}{3} + \frac{t}{4}\right) = 12 \cdot \frac{2}{1}$

$12 \cdot \frac{2}{3} + \frac{12 \cdot t}{4} = \frac{24}{1}$

$\frac{24}{3} + \frac{12t}{4} = 24$

$8 + 3t = 24$

2)

$$8 + 3t = 24$$
$$-8 \qquad -8$$
$$3t = 16$$
$$\frac{3t}{3} = \frac{16}{3}$$
$$t = \left(\frac{16}{3}\right)$$ checks

Checks

$$\frac{2}{3} + \frac{1}{t} = \frac{16}{3} = 2$$

$$\frac{2}{3} + \frac{4}{3} = 2$$

$$\frac{2+4}{3} = 2$$

$$\frac{6}{3} = 2 \text{ TRUE!}$$

(13)

(10) → 2 places

$0.76 + 0.21t = 0.96t - 0.49$

rule (100)(0.65)

2 zeros

= 65

$100 \cdot (0.76 + 0.21t) = 100 \cdot (0.96t - 0.49)$

$76 + 21t = 96t - 49$

$+49 \qquad +49$

$125 + 21t = 96t$

$$125 + 21t = 96t$$
$$-21t \quad -21t$$

$$125 = 75t$$

$$\frac{125}{75} = \frac{75t}{75}$$

$$\frac{125}{75} = t$$

$$125 = 5 \cdot 25$$
$$75 = 3 \cdot 25$$
$$\frac{125}{75} = \frac{5 \cdot 25}{3 \cdot 25} = \frac{5}{3}$$

$t = 5/3$ LOWEST TERMS

ALT:

$$76 + 21t = 96t - 49$$
$$-96t \quad -96t$$

$$76 - 75t = -49$$
$$-76 \qquad -76$$

$$-75t = -125$$

$-a = -b$

rule: Then $a = b$

$$75t = 125$$
$$t = \frac{125}{75} = \frac{5}{3}$$

2.3 suggestion: DO ALL ODDS IF TIME PERMITS

example

problem

1 ⟶ 1, 3 WORK ON THESE NOW

2 ⟶ 9

3 ⟶ 19 (TRY 21, 17 ETC)

4 ⟶ ≥7

5 ⟶ 45

6 ⟶ 49, 25

7 ⟶ GOOD!

(1.) $d = 340 \cdot t$

↓

distance sound TRAVELS in a time t.

t is in seconds

$340 \frac{\text{meter}}{\text{second}}$

review:

distance = speed · time

oakland is 15 miles away:

$15 \text{ miles} = 60 \frac{\text{miles}}{\text{hour}} \cdot t$

$$15 = 60 \cdot t$$

$$\frac{15}{60} = \frac{60t}{60}$$

$$\frac{1}{4}\ \text{hour} = t$$

AFA

15 minutes to get to Oakland

---

return to: $d = 344 \cdot t$

$$d = 344 \cdot 0.9 \frac{m}{s} s$$

$$d = 344 \frac{m}{s} \cdot 0.9\ s$$

(9)

$$\begin{array}{r} 344 \\ \times\ 0.9 \\ \hline 309.6 \end{array}$$

1 digit right of .

← one place

$d = 309.6\ (cm)$ Required F.M.I.

$\simeq 900\ ft$ F.Y.I.

(19) $A = \pi r^2$ FIND π

$A = \pi r^2$, π

$\frac{A}{r^2} = \frac{\pi r^2}{r^2}$

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(1) clear fractions
(2) Isolate variable on one side
(3) combine like terms
(4) solve! :)

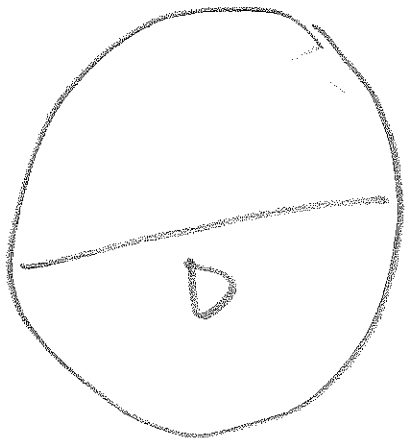
(9.) $\boxed{\frac{A}{r^2} = \pi}$

Note (10

$\pi = 3.14.....$

Egyptians: 6000 BC

circle



$\pi = \frac{2\pi r}{D}$

(27.) $4x - 3y = 6 ; y$

(1) Fractions
(2) Isolate
(3) Like terms
(4) Solve

$4x - 3y = 6$

$+3y \quad +3y$

$\frac{4x}{-6} = \frac{6}{-6} + \frac{3y}{-6}$

(1

$$4x - 6 = 3y$$

$$\frac{4x-6}{3} = \frac{3y}{3}$$

$$\frac{(4x-6)}{3} = y$$

$$\frac{4x-6}{3}$$

ALT: $4x - 3y = 6$

$-4x \qquad -4x$

$-3y = 6 - 4x$

isolated

(12

Alt Eq:

$$\frac{-3y}{-3} = \frac{6-4x}{-3}$$

$$y = \frac{6-4x}{3} = \frac{(6-4x)}{3}$$ (OR)

$$= \frac{-(6-4x)}{3}$$

Pull $-(a-b) = -a+b$

$$= \frac{-6+4x}{3}$$

$$= \frac{4x-6}{3}$$

student question: $\frac{-2}{3}$ $\frac{6-4x}{}$ (illegal)

$\frac{-2}{3}$ $\frac{6-4x}{}$ ← example of illegal

$\frac{-4}{-2}$

$= -2+4x$ legal

(55.) $2x+5y=10$

$-2x \qquad -2x$

(FOR Y)

Isolated $5y = 10-2x$

$$\frac{5y}{5} = \frac{10-2x}{5}$$

$$y = \frac{(10-2x)}{5}$$

illegal: $\frac{10-2x}{5}$

$= 2-2x$

BEFORE math LAW

Example of illegal: $\frac{10-20x}{5} = \frac{10-20x}{5} = 2-4x$

(45.) $t = 27 - \frac{1}{4}(w-e)$ FOR e:

(1) fractions ✓ $\quad \frac{t}{1} = \frac{27}{1} - \frac{1}{4}(w-e)$

(2) Isolate

(3) TERMS (LIKE)

(4) solve

LCD of 1, 1 and 4

LCD = 4

$\frac{4}{1} = 4$

$\frac{4}{1} = 4$

$\frac{4}{4} = 1$

$\frac{t}{1} = \frac{27}{1} - \frac{1}{4}(w-e)$

$\hat{4} \cdot \frac{t}{1} = \hat{4} \cdot \left[\frac{27}{1} - \frac{1}{4}(w-e)\right]$

$\hat{4}t = \hat{4} \cdot \frac{27}{1} - \hat{4} \cdot \frac{1}{\hat{4}}(w-e)$

$4t = 108 - (w-e)$

$4\ell = 108 - (w - l)$ (16

$4\ell = 108 - w + l$ ⇒

$-(a-b) = -a+b$ rule

$4\ell = 108 - w + l$

$+w \qquad +w$

$4\ell + w = 108 + l$

$-108 \qquad -108$

$4\ell + w - 108 = l$ answer

cannot be combined

(4a.) FOR h:

$$A = \frac{1}{2}ah + \frac{1}{2}bh$$

$$\frac{A}{1} = \frac{1}{2}ah + \frac{1}{2}bh$$

LCD of 1, 2 and 2 = 2

① frac. ✓
② Iso
③ Like ✓
④ solve

$$2 \cdot \frac{A}{1} = 2 \cdot \left[\frac{1}{2}ah + \frac{1}{2}bh\right]$$

$$2A = ah + bh$$

$$2A = (a + b) \cdot h$$

combine like TERMS

(case sensitive)

$$\frac{2A}{(a+b)} = \frac{(a+b)\cdot h}{(a+b)}$$

$$\frac{2A}{b} = \frac{b \cdot h}{b} \rightarrow \frac{A}{1} = h$$

Quick example

$$\frac{2A}{(a+b)} = h$$

case sensitive

answer

2.4 ODD

EX		PROBLEM
1	→	19, 21, 23
2	→	1, 3, 5
3	→	33, 35, 37, 39, 41
4	→	52
5	→	47
6	→	45
7	→	65

[Do these at home before WED]

8	→	67
9	→	83

ANSWERS QUIZ 1

Real Quiz 1 AU13 MATH 65; DO PROBLEMS 1 TO 7 IN CLASS; THE REST ARE TAKE HOME(8 TO 12). Write on white pages with this test sheet. Turn in your written work only on white sheets; SEPARATE papers and take test sheet home and do the Take Home Part BELOW.

The first 4 problems are from sec. 1.1.

1. **Evaluate (p + q)/q for p = 0 and q =3.** $\frac{(0+3)}{3} = \frac{3}{3} = 1$

2. **If b = 6 ft and h = 8 ft for a rectangle, what is the area?** $(8ft)(6ft) = (6ft)(8ft) = 48ft^2$

3. **Translate the following to mathematics, the international language of the world ! One MORE than the product of two numbers is 50 :** $1 + x \cdot y = 50$

4. **Translate the following equation into mathematics. When 42 is SUBTRACTED from a number, the result is 2314. For extra credit, solve.** → $x - 42 = 2314$

$x = 42 + 2314$

$x = 2356$

The next 3 problems are from 1.2

5. **Factor : 10 + 10x + 30y + 30z** $= 10 \cdot (1 + x + 3y + 3z)$

6. **Factor: 60a + 120b** $= 60 \cdot (a + 2b)$

7. **Multiply: (3x + y + 12)6** $= 18x + 6y + 72$

The NEXT probs. are from 1.3 unless noted otherwise and ARE *TAKE HOME*. DUE WED 8/28 AT START OF CLASS .

8. **Find the prime factorization of 2500.** $= 5 \cdot 5 \cdot 2 \cdot 5 \cdot 2 \cdot 5$

$= 5 \cdot 5 \cdot 5 \cdot 5 \cdot 2 \cdot 2$

9. **Simplify <u>fully</u> : 210/98**

10. **Perform the indicated operation: ADD. 1/2 + 3/4**

11. **Divide and simplify if possible: (2/3) ÷ (7/10). This means 2/3 divided by 7/10.**

12. **SECTION 1.4 :**
(a) **Is this sentence TRUE OR FALSE? -1000 < 2. Write TRUE OR FALSE.**
(b) **Find the absolute value: | x| , for x = -67.2**
(c) **Is this sentence TRUE OR FALSE? | -1000 | < 2. Write TRUE OR FALSE.**
(d) **List in order from least to greatest:**
~~13~~, ~~-12.5~~, ~~-17~~, ~~-123~~, 123, ~~-122.5~~, 14, ~~-2~~, ~~0~~

9. $\frac{210}{98} = \frac{2 \cdot 105}{2 \cdot 49} = \frac{2 \cdot 5 \cdot 21}{2 \cdot 7 \cdot 7} = \frac{2 \cdot 5 \cdot 3 \cdot 7}{2 \cdot 7 \cdot 7} = \frac{15}{7}$

10. $\frac{1}{2} + \frac{3}{4} = \frac{1}{2} \cdot \frac{2}{2} + \frac{3}{4} \cdot \frac{1}{1} = \frac{2}{4} + \frac{3}{4} = \frac{5}{4}$

11. $\frac{2}{3} \cdot \frac{7}{10} = \frac{2}{3} \cdot \frac{10}{7} = \frac{20}{21}$

12. (a) $-1000 < 2$ TRUE

(b) $|-67.2| = 67.2$

(c) $|-1000| < 2$ FALSE

(d) $-123, -122.5, -17, -12.5, -2, 0, 14, 123$

Quiz 2 answers (20

QUIZ 2 MATH 65 SECTION 072 AU13 (NO CALCULATORS)

 # 1 TO #8 ARE IN-CLASS AND #9 TO #12 ARE TAKE HOME DUE MONDAY.

1. **SEC. 1.5. Add. 111 + (-136).** $= -(136-111) = -25$ (1)
2. **SEC. 1.5. Add. 36 + (-14) + (-19) + (-6) + 1 + (-1) + 2 + (-2) + 36.** $= 75 + (-42) = 33$

The next probs. are from sec 1.6

3. **Find the opposite of 89.1** $= -89.1$
4. **Subtract: 6 - (-14)** $= 6+14 = 20$
5. **Subtract: -15 - (-14)** $= -15+14 = -1$
6. **Subtract: 2 - (-100)** $= 2+100 = 102$
7. **Subtract: 2 - 100** $= -98$
8. **Subtract: 2 – (-100) – (-3)** $= 2+100+3 = 105$ (1)

THE NEXT PROBLEMS ARE TAKE HOME DUE MON 9/09/13

9. **Combine like terms: -2 - 6t + 10 + 2t + 5 - 7t** $= 13+(-11t) = 13-11t$
10. **Combine like terms: -5y - (-3x) + 9x - (- 1) - 2y - (- 9)** $=$
11. **Combine like terms: 5y - (-4x) + 8x - (- 5) - 3y - 7 + 3x**
12. **(a) Find -(-x) when x = -3 (b) Find -(-(-x)) when x = -4 (c) Find - (-(-(-x))) when x = 7**

(10) $-5y-(-3x)+9x-(-1)-2y-(-9)$

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

$= -7y+12x+10 = 12x-7y+10$

(11) $5y-(-4x)+8x-(-5)-3y-7+3x$

$= 5y+4x+8x+5+(-3y)+(-7)+3x$

$= 2y+15x-2 = 15x+2y-2$

(12) (a) $-(-x) = -(-(-3)) = -3$ (b) 4 (c) 7

CHANGE SIGNS TWICE give ORIGINAL #.

Quiz 3 Answers to 1 to 9:

QUIZ 3 MATH 65 AU13 THE FIRST 9 PROBLEMS ARE IN-CLASS, THE REST ARE TAKE HOME.
1. SEC. 1.7 Multiply. (-3)*(-24)*(-10)*(-1)*(-1)*(-1)*(-1)*(-1)*(1) = +720
2. SEC. 1.7 Divide: -63,000/9 = -7000
3. Sec. 1.7. Divide. 7290/(-9) = -810
4. Sec. 1.7. Multiply the three fractions: (-7/4)*(-3/5)*(1/2) = 21/40
5. Sec. 1.7. What is the reciprocal of 84 ? Check your answer. → 1/84
6. Sec. 1.7. What is the reciprocal of 2/3 ? Check your answer. → 3/2
7. Sec. 1.7. Subtract: (4/7) - (-2/7) = 4/7 + 2/7 = 6/7
8. SEC. 1.8 Simplify. 3 - 62 + 2*17 → 3-62+34 = -59+34
9. SEC. 1.8 Simplify $3^2 + 4^2 - 15 \div 5$
Below is take home due Wed 9-11-13
10. Sec. 1.8. Simplify: $[3^2 + 4^2 \div 2*(-2)^2] \div [3^2 + 4^2 - 15 \div 5]$
11. Sec. 2.1. Solve for x. -6 + x = -21
12. Sec. 2.1. Solve for y. –y/3 = 2/7.

= -(59-34)
= -25

$3^2+4^2-15\div5$

$= 9+16-15\div5$

$= 9+16-3$

$= 25-3 = 22$

Quiz 3 Mon 9-9 tentative

1.7, 1.8 2.1, 2.2 (?)

take home

in-class

sec.