25% in a story problem:

decrease

① use 0.25

(a) 25% discount

discount amt = ?

(b) 25% wt. loss

how much did I lose?

decrease

② use 0.75

(a) 25% discount

how much did I pay?

(b) 25% wt loss

how much do I weigh now?

(c) 75% decrease

what is decrease amt?

increase

③ use 1.25

(a) salary increased by 25%

what is new salary?

4) (a) $\sqrt{49} = 7$ ✓

(b) $-3.41565656\ldots$ ✓

(c) add. id. $= 0$ ✓

(d) mult. id $= 1$ ✓

(e) $4.232232223\ldots$ ✓

(f) -4 ✓

(g) no #s ✓

(h) no #s ✓

(i) $0.\overline{9} = 1$

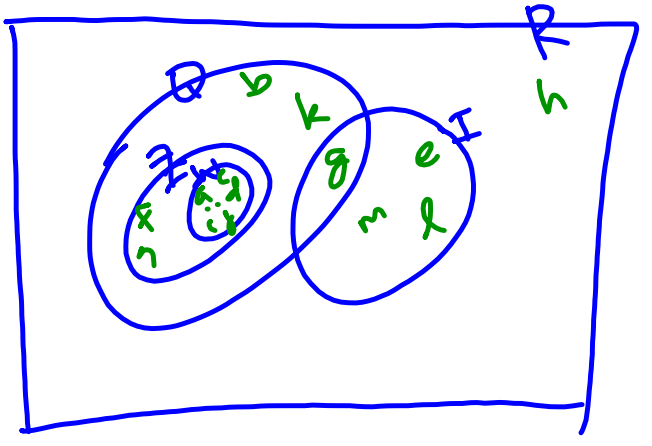
(j) $0 \div 53 = 0$ ✓

(k) $\frac{2}{7}$ ✓

(l) $\frac{3}{\pi}$

(m) $\sqrt{48} = \sqrt{16 \cdot 3} = 4\sqrt{3}$

(n) $-\sqrt{25} = -5$



7) (a) N^4+N^3

$N^4>0$, $N^3<0$

① if $N<-1$, then $N^4+N^3>0$

② if $N=-1$, $1+-1=0$

(b) $O^2-\frac{E}{O}+E+OE$

O^2 odd

E even

OE even

$\frac{E}{O}$ ex $\frac{6}{3}=2$, $\frac{6}{5}$, $\frac{2}{3}$ impossible to determine

O^2+E+OE

even

odd

GCF/LCM

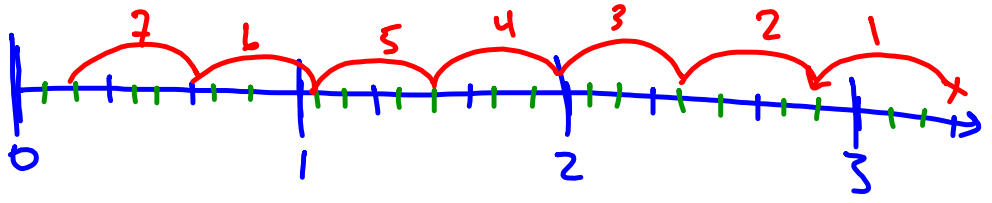
60 green, 75 pink ; Largest # gift bags

GCF(60,75) = 15

15 gift bags, each with 4 green
5 pink

2) $\dfrac{3\frac{1}{3}}{\frac{4}{9}} = 3\frac{1}{3} \div \frac{4}{9} = 7\frac{1}{2}$

$\frac{\overset{5}{\cancel{10}}}{\underset{1}{\cancel{3}}} \cdot \frac{\overset{3}{9}}{\underset{2}{\cancel{4}}} = \frac{15}{2} = 7\frac{1}{2}$



book

Chp 2) 17) $U = \{u, n, i, v, e, r, s, a, l\}$

$A = \{r, a, v, e\}$

$B = \{a, r, e\}$

$C = \{l, i, n, e\}$

$D = \{s, a, l, e\}$

$B - A = \emptyset$

(i) $n(B - A) = 0$

(j) $n(\bar{C}) = 5$

$\bar{C} = \{u, v, r, s, a\}$

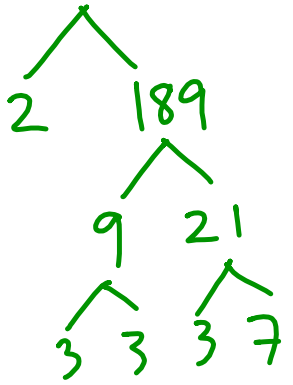
(a) $\{f, u, n\}$

total # subsets: $2^3 = 8$

(b) $\{1, 2, 3, 4, 5\}$

total # subsets: $2^5 = 32$

$378 = 2^1 \cdot 3^3 \cdot 7^1$



total # factors:

$2(4)(2) = 16$

$$
\begin{array}{r}
40_s \text{ R } 43_s \\
44_s \overline{)\,4003_s} \\
-\,440_s \qquad 10_s \text{ groups} \\
\hline
3613_s \\
-\,440_s \qquad 10_s \text{ "} \\
\hline
3173_s \\
-\,440_s \qquad 10_s \text{ "} \\
\hline
2733_s \\
-\,440_s \qquad 10_s \text{ "} \\
\hline
2293_s \\
\vdots \\
43
\end{array}
$$

---

55 cups total, $1\frac{2}{7}$ cup/day # days 42

fraction of cups leftover 1 cup

$55 \div 1\frac{2}{7} = 55 \div \frac{9}{7}$

$= 55 \cdot \frac{7}{9} = \frac{385}{9} = 42\frac{7}{9}$

$\frac{7}{9}$ of a daily serving leftover $\Rightarrow$ we have $\frac{7}{9}\left(\frac{9}{7}\right) = 1$

$\left(\frac{16}{25}\right)^{-1/2} = \left(\frac{25}{16}\right)^{1/2} = \sqrt{\frac{25}{16}} = \frac{\sqrt{25}}{\sqrt{16}} = \frac{5}{4}$

$\left(\frac{-8}{5}\right)^{-3} = \left(\frac{-5}{8}\right)^{3}$ $\qquad 7^{-3} = \frac{1}{7^3}$

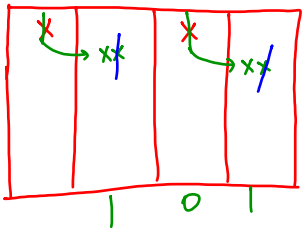
$\frac{1}{9^{-2}} = 9^2$

8) $\frac{1}{2} - \frac{1}{3}\left(\frac{1}{2}\right)$ | starts w/ $\frac{1}{2}$ cup. Takes away $\frac{1}{3}$ cup. $\frac{1}{2} - \frac{1}{3}$

Chp 3)

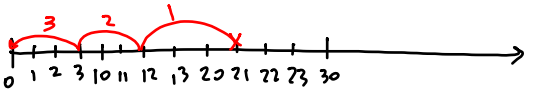
21 b) $1010_2 - 101_2 = 101_2$

$\overset{9}{1}\overset{1}{0}\overset{1}{1}0_2 - 101_2 = 101_2$

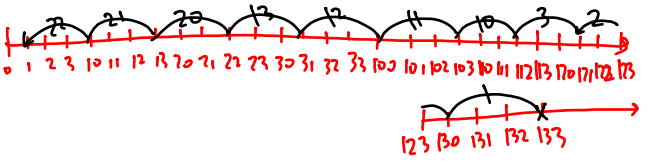


line:

$21_4 \div 3_4 = 3_4$



$133_4 \div 3_4 = 22_4 R1_4$



11) 19 orders

burger $3.10

hot dog $1.80

bill total $44.30

b = # burgers, h = # hot dogs

① $b + h = 19 \iff b = 19 - h$

② $3.10b + 1.8h = 44.30$

$31b + 18h = 443$