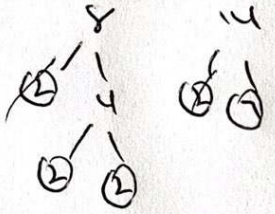
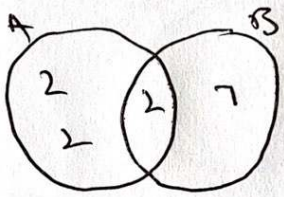
QT LCM Word Problems

1. Bus A and Bus B both leave Leeds at 11.00am. Bus A stops every 8 minutes and Bus B stops every 14 minutes. Assuming that both buses are on a circular route, when could they both meet in Leeds again?



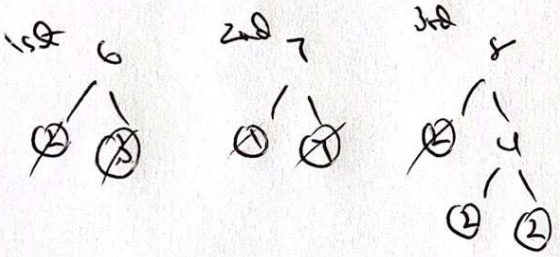


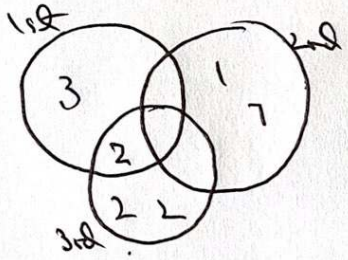
11.56am.

LCM = 2 × 2 × 2 × 7

= 56

2. My first snooze alarm goes off every 6 minutes
My second snooze alarm goes off every 7 minutes
My third snooze alarm goes off every 8 minutes.
Assuming all the alarms went off at 7.00am, how long will it be before they all sound again …. and I absolutely, have to, get up?





LCM = 1 × 2 × 2 × 2 × 3 × 7

= 168 minutes

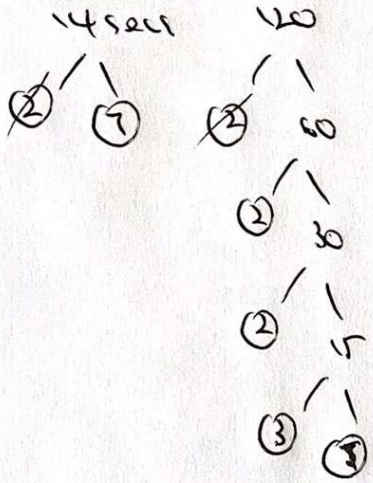
= 2 hours 48 mins

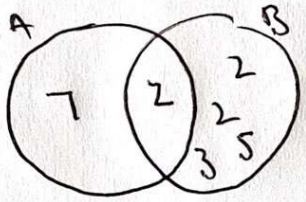
= 9.48am. — You are very late!

3. A lighthouse has two lights. One that flashes every 14 seconds, and one that flashes every 2 minutes. If the lights flash together at 10.00pm, when will they next flash together?

120 seconds

14 sec





LCM = 2 × 2 × 2 × 3 × 5 × 7

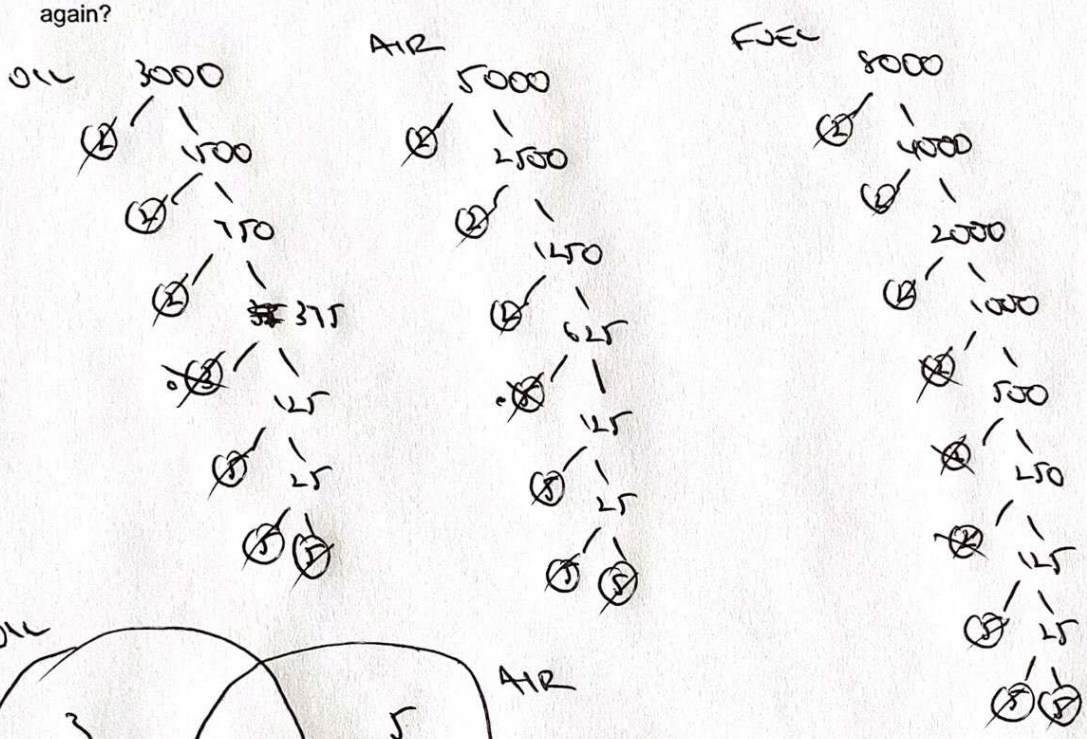
= 840 seconds.

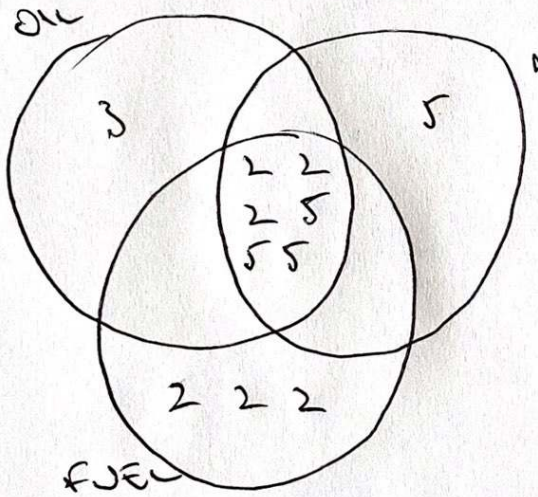
$\frac{840}{60} = \frac{84}{6}$ $= 6\overline{)84}^{14}$

= 14 minutes

= 10.14pm.

4. A car service manual recommends changing the oil filter every 3000 miles, the air filter every 5000 miles, and the fuel filter every 8000 miles.
The car is driven 1500 miles per month.
If all three were changed on 1st January, after how many months should they all be changed again?





LCM = $2^6 \times 3 \times 5^4$

= 120 000 miles

$\frac{120,000}{1500}$ = 80 months

= (6 $\frac{1}{2}$ years)