S1/2 (M) HW14

1) a) 10% $\frac{10}{100} = \frac{1}{10}$ 0·10 = 0·1

b) 25% $\frac{25}{100} = \frac{1}{4}$ 0·25

c) 26% $\frac{26}{100} = \frac{13}{50}$ 0·26

d) 75% $\frac{75}{100} = \frac{3}{4}$ 0·75

e) 65% $\frac{65}{100} = \frac{13}{20}$ 0·65

f) 36% $\frac{36}{100} = \frac{9}{25}$ 0·36

2)

3hr 30min	$3\frac{1}{2}$ hrs	3·5hrs
1hr 20min	$1\frac{1}{3}$ hrs	1·33hrs (2dp)
2hr 40min	$2\frac{2}{3}$ hrs	2·67hrs (2dp)
5hr 45min	$5\frac{3}{4}$ hrs	5·75hrs
4hr 20min	$4\frac{1}{3}$ hrs	4·33hrs (2dp)

Note: 20 mins $= \frac{20}{60}$ hrs $= \frac{1}{3}$ hrs $= (1 \div 3) = 0{\cdot}333\ldots$ hrs

0·75hrs $= 0{\cdot}75 \times 60 = 45$ mins $= \frac{45}{60}$ hrs $= \frac{3}{4}$ hrs

3) $D = S \times T$

a) $D = 50 \times 2 = 100$ miles

b) $D = 50 \times 6 = 300$ miles

c) $T = 30\text{mins} = 0{\cdot}5\text{hrs} \rightarrow D = 50 \times 0{\cdot}5 = 25$ miles

d) $T = 3{\cdot}5\text{hrs} \rightarrow D = 50 \times 3{\cdot}5 = 175$ miles

4) $T = D \div S$ or $T = \frac{D}{S}$

a) $T = 200 \div 40 = 5$ hrs

b) $T = 20 \div 5 = 4$ hrs

c) $T = \frac{60}{40} = \frac{3}{2} = 1\frac{1}{2}$ hrs = 1hr 30mins

5) $S = D \div T$ or $S = \frac{D}{T}$

a) $S = 100 \div 4 = 25$ km/h

b) $S = 50 \div 2.5 = 20$ mph

c) $S = 100 \div 10 = 10$ metres per sec

d) $S = 72 \div 8 = 9$ km/h

6) a) $6 - 13 = -7$

b) $-33 - 14 = -47$

c) $-17 + 23 = 23 - 17 = 6$

d) $6 - (-8) = 6 + 8 = 14$

e) $-8 - (-4) = -8 + 4 = -4$

f) $-67 + (-23) = -67 - 23 = -90$

7) 550ml

28% extra $= 0.28 \times 550 = 154$ml

New volume $= 550 + 154$

$= 704$ml