(1) $9.14x\left(\frac{1}{14}+\frac{1}{x}\right)=9.14x\left(\frac{1}{9}\right)$

$9x+126=14x$

$\boxed{x=25.2 \text{ minutes}}$

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(2) P: $\frac{\text{rate}}{\frac{10 \text{ hours}}{1 \text{ tank}}} \rightarrow \frac{1}{10}\ \frac{\text{tank}}{\text{hours}}$

V: $\frac{20 \text{ hours}}{1 \text{ tank}} \rightarrow \frac{1}{20}\ \frac{\text{tank}}{\text{hour}}$

Pipeline-Value: $\frac{1}{10}-\frac{1}{20}=\frac{1}{20}\ \frac{\text{tank}}{\text{hour}} \rightarrow \frac{20 \text{ hours}}{1 \text{ tank}}$ $\boxed{20 \text{ hours}}$

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(3) P: $\frac{x \text{ days}}{1 \text{ job}} \rightarrow \frac{1}{x}\ \frac{\text{job}}{\text{days}}$

A: $\frac{30 \text{ days}}{1 \text{ job}} \rightarrow \frac{1}{30}\ \frac{\text{job}}{\text{days}}$

Together: $\frac{1}{30}+\frac{1}{x}$

$\left(\frac{1}{x}\cdot 10\right)+\left(\left(\frac{1}{30}+\frac{1}{x}\right)\cdot 6\right)=1$

you can think of this as one job

$30x\left(\frac{10}{x}+\frac{6}{x}+\frac{6}{30}\right)=(1)^{30x}$

$480=24x$

$\boxed{x=20 \text{ days}}$

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(4) $\frac{x-4}{x+26}=\frac{1}{3}$

$3x-12=x+26$

$\boxed{x=19}$

(5) $\frac{1}{x}(5) + x = 10.5$

$x\left(\frac{5}{x} + x\right) = (10.5)x$

$x^2 - 10.5x + 5 = 0$

$(x - 1/2)(x - 10) = 0$

$\boxed{x = 1/2, 10}$

(6) $2000 = (10/3)(50 + x)$

$\boxed{x = 550 \text{ mph}}$

(7) $\left(\frac{32}{3}\right)(x + 5) = 26$

$\boxed{x = -2.56 \text{ mph}}$

(8) A: $\frac{4 \text{ hours}}{1 \text{ tank}} \rightarrow \frac{1 \text{ tank}}{4 \text{ hours}}$

B: $\frac{3 \text{ hours}}{1 \text{ tank}} \rightarrow \frac{1 \text{ tank}}{3 \text{ hours}}$

Together: $\frac{1}{4} + \frac{1}{3}$

$\left(\frac{1}{4} \cdot 1\right) + \left(\left(\frac{1}{4} + \frac{1}{3}\right) \cdot x\right) = 1$

$\frac{1}{4} + \frac{7}{12}x = 1$

$\frac{7}{12}x = \frac{3}{4}$

$\boxed{x = 1\frac{2}{7} \text{ hours}}$