Practice 10-2, Example Exercises

1. $\angle KML \cong \angle PMN$ because vertical angles are congruent. $\angle K \cong \angle P$ (Given). Therefore $\triangle KML \sim \triangle PMN$ by the AA $\sim$ Postulate. 2. Since $AB \parallel DE$, alternate interior angles are $\equiv$. So $\angle BAC \equiv \angle DEC$ and $\angle ABC \equiv \angle EDC$. Then $\triangle ABC \sim \triangle EDC$ by the AA $\sim$ Postulate. 3. $\angle Y \equiv \angle S$ since all right angles are $\equiv$. $\angle Z \equiv \angle R$ (Given). Therefore $\triangle ZYX \sim \triangle RST$ by the AA $\sim$ Postulate. 4. $\frac{28}{3}$ 5. $\frac{50}{7}$ 6. $8$
7. $12$ 8. $\frac{55}{6}$ 9. $\frac{16}{5}$ 10. $\angle EAD \equiv \angle CAB$ because vertical angles are $\equiv$. Then, since $\frac{EA}{CA} = \frac{7}{10.5} = \frac{2}{3}$ and $\frac{DA}{EA} = \frac{8}{3} = \frac{2}{3}$, $\triangle EAD \sim \triangle CAB$ by the SAS $\sim$ Theorem; $x = 6$.

11. Since $\frac{QR}{MN} = \frac{RM}{NP} = \frac{MQ}{PM} = \frac{1}{2}$, $\triangle QRM \sim \triangle MNP$ by the SSS $\sim$ Theorem; $x = 90$. 12. Since $\frac{AB}{XY} = \frac{BC}{YZ} = \frac{3}{2}$ and $\angle B \equiv \angle Y$ (Given), $\triangle ABC \sim \triangle XYZ$ by the SAS $\sim$ Theorem; $x = \frac{10}{3}$.