Algebra Skills:

1. Solve for each unknown variable.

a) $154 - 9.8 \cdot t = 23.0$

$-9.8t = -131$

$t = 13.4$

b) $18 = \frac{1}{2} \cdot (7.5) \cdot x^2$

$4.8 = x^2$

$x = 2.2$

c) $32.5 = \frac{15.1}{t}$

$t = \frac{15.1}{32.5}$

$t = .46$

d) $14.0 = (2.5) \cdot F \cdot \sin(40°)$

$5.6 = F \cdot (.64)$

$F = 8.7$

e) $1.5 = \frac{(8.85 \times 10^{-12}) \cdot A}{(.21)}$

$.315 = (8.85 \times 10^{-12}) \cdot A$

$A = 3.6 \times 10^{10}$

f) $2.5 = 2 \cdot \pi \sqrt{\frac{m}{120}}$

$.398 = \sqrt{\frac{m}{120}}$

$.158 = \frac{m}{120}$

$m = 19$

2. Solve each system of equations for the given variables.

a) $39.2 - T = 4 \cdot a$
$T - 12.6 = 3 \cdot a$

$39.2 - (3a + 12.6) = 4a$

$26.6 = 7a$

$a = 3.8$

$T = 3a + 12.6$

$T = 24$

b) $T \cdot \cos(53°) = R$
$T \cdot \sin(53°) - 600 = R + 300$

$T \sin 53 - 600 = (T \cos 53) + 300$

$T(\sin 53 - \cos 53) = 900$

$T = 4573$

$R = 2752$