Ex 1) Use $x = x_0 + v_0 t + \frac{1}{2} a t^2$ (D, 2.16)

$x = 10 + 10(5) + \frac{1}{2}(4)(5)^2$

$x = 10 + 50 + 50 = 110\ m$

Ex 2) Use $x_f = x_i + \frac{1}{2}(v_i + v_f)t$ (C. 2.15)

$100 = 20 + \frac{1}{2}(5 + v_f)5$

$2(100 - 20) = 25 + 5v_f$

$\frac{160 - 25}{5} = v_f$ $\quad v_f = \frac{135}{5} = \boxed{27\ m/s}$

Or $\vec{v}_{avg} = \frac{\Delta x}{\Delta t} = \frac{80\ m}{5s} = 16\ m/s$ (def in. of $\vec{v}_{avg}$)

and $v_{avg} = \frac{v_1 + v_2}{2}$ (B, 2.14)

$16 = \frac{5 + v_2}{2}$ so $32 - 5 = v_2 = \boxed{27\ m/s}$

Ex 3) Use $v_{avg} = \frac{v_i + v_f}{2}$ (B, 2.14)

$v_{avg} = \frac{10 + 40}{2} = \boxed{25\ m/s}$

Ex 4) Use $v_{yf}^2 = v_{yi}^2 + 2a(y_f - y_i)$ (D, 2.17)

$40^2 = 10^2 + 2(9.8)\Delta y$ $\quad \Delta y$ = depth of well

$\frac{40^2 - 10^2}{19.6} = \Delta y = \frac{1500}{19.6} = \boxed{76.5\ m}$

Ex 5) Use $\vec{v}_f = \vec{v}_i + \vec{a}t$ (A, 2.13)

$v_f = -5\ m/s + 3(7s)$

$= -5 + 21 = +16\ m/s$ (right)