

ER 9.2 Key

$$\textcircled{1} \quad S_n = \frac{a_1 - a_1 r^n}{1-r} \qquad a_n = a_1 r^{n-1}$$

$$\textcircled{a} \quad S_{14} = \frac{.25 - .25(1.10)^{14}}{1-1.10}$$

$$\textcircled{b} \quad \sum_{n=1}^{14} (25)(1.10)^{n-1}$$

$$\textcircled{c} \quad 6.993... \approx 7 \text{ mi}$$

	Explicit	vs.	Recursive
$\textcircled{2} \textcircled{a}$ Geometric:	$a_n = 125(1.05)^{n-1}$		$a_1 = 125, a_n = 1.05a_{n-1}$
\textcircled{b} Arithmetic:	$a_n = 185 + (n-1)15$		$a_1 = 185, a_n = 15 + a_{n-1}$

$$\textcircled{3} \quad a_1 = 3$$

$$a_2 = -2(3) + 2(2)$$

$$a_2 = -2$$

$$a_3 = -2(-2) + 2(3)$$

$$a_3 = 10$$

$$a_4 = -2(10) + 2(4)$$

$$a_4 = -12$$

$$a_5 = -2(-12) + 2(5)$$

$$\boxed{a_5 = 34}$$