The limit of a recurrence relation

Consider the recurrence relation

$$u_{n+1} = 0.6u_n + 8$$

We can determine this limit algebraically as follows.
Let L be the limit of the recurrence relation (1) above. Then

$$L = 0.6L + 8$$
$$L - 0.6L = 8$$
$$0.4L = 8$$
$$L = 8/0.4$$
$$= 20$$

In each example below - Obtain the limit algebraically.

1. $u_{n+1} = 0.8u_n + 5$

2. $u_{n+1} = 0.1u_n + 4$

3. $u_{n+1} = 0.5u_n + 8$

4. $u_{n+1} = -0.2u_n + 7$

5. $u_{n+1} = -0.75u_n + 2$

6. $u_{n+1} = 0.95u_n + 3$

7. $u_{n+1} = -0.6u_n + 2$

8. $u_{n+1} = 5 - 0.3u_n$

9. $u_{n+1} = 0.64u_n + 10$

10. $u_{n+1} = 0.82u_n + 6$