Name: $\qquad$ .

## Preview §2.4: Actuarial notation

1. Define each symbol and state what it represents in plain English.
(a) ${ }_{t} p_{x}$
(b) ${ }_{t} q_{x}$
(c) ${ }_{u \mid t} q_{x}$
(d) $p_{x}$
(e) $q_{x}$
2. Fill in the blank and explain why it is true in plain English.

$$
{ }_{t} p_{x}+{ }_{t} q_{x}=
$$

3. Give a formula for ${ }_{u \mid t} q_{x}$ in terms of ${ }_{r} p_{x}$ 's.
4. State formula 2.15.
5. State formula 2.16.
6. State formula 2.17.
7. State formula 2.18.
8. State formula 2.19.
9. State formula 2.20 and give an interpretation in plain English.
10. State formula 2.20 for the special case $t=1$.
11. Give an approximation for $q_{x}$ for the special case when $q_{x}$ is small.
