

# Lifecontingencies package numerical accuracy tests

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## 1 Introduction

This vignette shows numerical tests that compares lifecontingencies computations with figure shown in published textbooks. Yet very incomplete.

```
R> #load lifecontingencies package
R> library(lifecontingencies)
```

## 2 Actuarial mathematics

[1, p 111], whole life insurance., at 4%.

```
R> data(soa08Act)
R> #should be 0.01577285
R> Axn(soa08Act, x=30, n=10, i=0.04)
```

```
[1] 0.01577283
```

[1, p 112],  $A_{30}$ , at 6%.

```
R> #should be 102.4835
R> 1000*Axn(soa08Act, x=30, i=0.06)
```

```
[1] 102.4835
```

[?, p 437],  $\ddot{a}_{50:\overline{20}}$

```
R> #should be 0.01155
R> Axn(soa08Act, 50, 20)/axn(soa08Act, 50, 20)
```

```
[1] 0.0115451
```

## References

- [1] N. L. Bowers, D. A. Jones, H. U. Gerber, C. J. Nesbitt, and J. C. Hickman. *Actuarial Mathematics, 2nd Edition*. SOA, 1997.