

Comparing Simple Interest and Compound Interest

1. If you invest \$5,000 at 3.5% simple interest for three years,
 a. How much interest do you earn?

$$I = Prt$$

$$P = 5000$$

$$r = 0.035$$

$$t = 3$$

$$I = 5000 \times 0.035 \times 3$$

$$= 15000 \times 0.035$$

$$= \$525$$

- b. What is your final investment worth?

$$5000 + 525 = \$5,525$$

initial investment → 5000
 interest → 525

2. If you invest \$5,000 at 3.5% interest compounded weekly for three years,
 a. What is your final investment worth?

$$FV = PV(1+i)^n$$

$$PV = 5000$$

$$i = \frac{0.035}{52} = 0.00067$$

$$n = 52 \times 3 = 156$$

$$FV = 5000(1+0.00067)^{156}$$

$$= 5000 \times 1.00067^{156}$$

$$= 5590.69$$

- b. How much interest do you earn?

$$\$5590.69$$

3. Which investment is better? Does this make sense?

Compound

Yes, because you earn interest ON your interest