

Lesson 4.4 & 4.5 - Inflation & Depreciation

$$FV = PV \left(1 \pm \frac{r}{100} \right)^t$$

FV = future value

PV = present value

r = rate as a %

t = # of years

EXAMPLE #1

In 1990, the average price of a barrel of oil was \$23.19. If price inflation occurred at an average rate of 3% after 1990, what would a barrel of oil have cost in 2010?

$$FV = 23.19 \left(1 + \frac{3}{100}\right)^{20}$$

$$= \boxed{\$41.88}$$

EXAMPLE #2

If the inflation rate in Canada this year is 2.35%, calculate the likely cost of a 450 CAD laptop computer:

a) one year ago

$$FV = 450 \left(1 + \frac{2.35}{100}\right)^{-1}$$
$$= \boxed{\$439.67}$$

b) in four years' time

$$FV = 450 \left(1 + \frac{2.35}{100}\right)^4$$
$$= \boxed{\$493.81}$$

EXAMPLE #3

Reena buys a new bicycle for 25,000 INR. She knows that the value of the bicycle will depreciate by 6% each year. What will her bicycle be worth in eight years' time?

$$FV = 25000 \left(1 - \frac{6}{100}\right)^8$$

$$= \$15239.22$$

EXAMPLE #4

José runs a printing business in Chile. He decides to buy a new printing press at a cost of 4500 pesos. The value of the press depreciates at a rate of 10% each year. How long will it take before the press is worth half the amount that José paid for it?

$$\underbrace{2250}_{Y_1} = \underbrace{4500 \left(1 - \frac{10}{100}\right)^t}_{Y_2}$$

Find the intersection = (6.6, 2250)

About 7 years