Quiz **Name** Key

1. The decline in a car's value over the course of its useful life is depreciation.

2. True or False. The rate of depreciation and the percent of the car's original value are the same.
r b $b = 1 + r$

3. True or False. The value of a new car changes the moment after you buy it.

4. A $33,900 (a) new car depreciates in value by 13% (r) per year. How much will the car be worth in 5 (x) years?

$y = ab^x$
$y = 33900(.87)^5$
16896.57
$b = 100\% - 13\%$
$b = 87\%$

A. $29,111.08
B. $16,896.47
C. $12,586.83
D. $19241.23

5. Amy is being offered $4950 (y) for a trade-in value for her 7-year (x) old car. She paid $18,995 (a) new for the car. What is the rate of depreciation?

$y = ab^x$
$4950 = 18995b^7$
$\frac{4950}{18995} = \frac{18995}{18995}$
$\sqrt[7]{.2606} = \sqrt[7]{b^7}$
$b = .83 = 83\%$
or $(.2606)^{1/7}$

$100\% - 83\% = 17\%$

A. 83%
B. 86%
C. 17%
D. 15%

6. A new Harley costs $18,684 (a) and decreases in value by 12% per year. How much will it be worth in 5 (x) years?

$b = 100\% - 12\% = 88\% = .88$
$y = ab^x$
$y = 18684(.88)^5$
9860.14

A. $9,860.14
B. $11,204.71
C. $8,676.93
D. $16,888.86

7. Trevor wants to buy a Ford F150 for $38,900 new. (a) He wants to trade in his 10 year old (x) F150 that he bought for $29,500. (a) How much should Trevor get for his trade-in if it depreciates at a rate of 15%? (r) How much should he pay for his new F150 figuring in the trade-in?

$100\% - 15\% = 85\%$
$.85$

Trade-in $5807.79

New F150 $33092.21

Trade-in
$y = ab^x$
$y = 29500(.85)^{10}$
$y = \$5807.79$

38900
$- 5807.79$ Trade-in
$\$33092.21$