

Key

Directions:

Bubble in the correct answer to each question on your BROWN scan-tron sheet. Write your name LEGIBLY on the scan-tron sheet, then find your form code at the top right corner of this page. Write the form code in the boxes at the top of the scan-tron sheet, and bubble in the numbers appropriately. You will turn in the scan-tron sheet, and keep this quiz sheet for your records.

Solve the following:

1. The unit cost of a product to a retailer is \$8.20. If the retailer wishes to make a profit of 20% on the selling price, at what price should the product be sold?

- (a) \$9.84
(b) \$16.25
(c) \$20.40
(d) \$10.25
(e) None of these

$$\begin{aligned}x &= \text{Selling price} \\ \text{profit} &= 0.20x \\ \text{selling price} &= \text{cost} + \text{profit} \\ x &= 8.20 + 0.20x \\ 0.80x &= 8.20 \quad x = \$10.25\end{aligned}$$

2. When the price of a product is p dollars each, suppose that a manufacturer will supply $5p^2 - 6p$ units of the product to the market and that consumers will demand to buy $36 - p^2$ units. At the value of p for which supply equals demand, the market is said to be in equilibrium. Find this value of p .

- (a) \$36.00
(b) \$3.00
(c) \$2.00
(d) \$6.00
(e) None of these

$$\begin{aligned}5p^2 - 6p &= 36 - p^2 \\ 6p^2 - 6p - 36 &= 0 \\ p^2 - p - 6 &= 0 \\ (p - 3)(p + 2) &= 0 \quad p = \$3.00\end{aligned}$$

3. Due to recent safety violations at a local mine, coal miners went on strike for 46 days. Before the strike, these miners earned \$17.00 per hour and worked 260 eight-hour days a year. Approximately what percentage increase is needed in yearly income to make up for the lost time within 1 year?

- (a) 18%
(b) 14%
(c) 19%
(d) 25%
(e) None of these

$$\frac{46 \times 8 \times 17}{260 \times 8 \times 17} \approx 18\%$$