Computer Organization and Design (4th) by Hennessy, Patterson Chapter 6.18, Problem 1E

## Step 1

a) Given data:

Number of drives = 1000.

Hours/Drive = 8760

Hours/failure = 1000000

Annual failure rate (AFR) =?

Step 2

Annual failure rate (AFR) =  $\frac{\text{Number of drives} \times \text{Hours/Drive}}{\text{Hours/failure}}$ 

 $=\frac{1000 \times 8760}{1000000}$ 

 $=\frac{8760000}{1000000}$ 

Annual failure rate (AFR) = 8.76%

- Step 3
- b) Given data:

Number of drives = 1000.

Hours/Drive = 10512

Hours/failure = 1500000

Annual failure rate (AFR) = ?

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## Step 4

Annual failure rate (AFR) = 
$$\frac{\text{Number of drives} \times \text{Hours/Drive}}{\text{Hours/failure}}$$
$$= \frac{1000 \times 10512}{1500000}$$
$$= \frac{10512000}{1500000}$$

Annual failure rate (AFR) = 7.008%