Task 1: Jill and Joe

1.a. How many pairs will Jill buy at $29.99?

A rational consumer will continue to purchase a good as long as the Marginal Benefit (MB) is greater than or equal to the Price (P), which represents the Marginal Cost.

· For the 1st pair: MB = $50, P = $29.99 → MB > P → Buy
· For the 2nd pair: MB = $40, P = $29.99 → MB > P → Buy
· For the 3rd pair: MB = $30, P = $29.99 → MB = P → Buy (She is indifferent, but typically consumes where MB ≥ P)
· For the 4th pair: MB = $20, P = $29.99 → MB < P → Do not buy

Answer: Jill will buy 3 pairs of shoes per year.

1.b. How many pairs will Jill buy at $39.99?

We apply the same logic with the new price.

· For the 1st pair: MB = $50, P = $39.99 → MB > P → Buy
· For the 2nd pair: MB = $40, P = $39.99 → MB > P → Buy
· For the 3rd pair: MB = $30, P = $39.99 → MB < P → Do not buy

Answer: At the higher price, Jill will buy 2 pairs of shoes per year.

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2. How many pairs will Joe buy at $29.99?

Joe's Marginal Benefit is exactly double Jill's MB.

Pairs Jill's MB Joe's MB (2x Jill's) Price
1 $50 $100 $29.99
2 $40 $80 $29.99
3 $30 $60 $29.99
4 $20 $40 $29.99
5 $10 $20 $29.99

A rational Joe will buy as long as his MB ≥ Price.

· 1st pair: $100 > $29.99 → Buy
· 2nd pair: $80 > $29.99 → Buy
· 3rd pair: $60 > $29.99 → Buy
· 4th pair: $40 > $29.99 → Buy
· 5th pair: $20 < $29.99 → Do not buy

Answer: Joe will buy 4 pairs of shoes per year.