**Lower Elementary:**

*Question:* Liam is choosing his outfit for the first day of school. He can’t decide between a red shirt, a blue shirt, and a yellow shirt. He also can’t decide between a pair of jeans and a pair of corduroys. How many different outfits can Liam make with these shirts and pants?

**Upper Elementary:**

*Question:* Ashley needs to buy spiral notebooks for school. NoteMart sells 2 spiral notebooks for $1.50. A+ Stationery sells spiral notebooks for 85¢ each. Hank’s Discount School Supplies sells 10 spiral notebooks for $8.00. Where should Ashley buy her notebooks if she wants the best deal?



**Middle School:**

*Question:* It’s 7:45 am, and class starts at 8:05 am. Lily can run 6 kilometres per hour. If Lily is 3 kilometres away from school, can she run to school in time? If so, how much time will she have to spare? If not, how late will she be?

**Calculus and Up:**

*Question:* There are five calculus classes at East Grand Rapids High School. Camilla, Daniel, and Elijah are all taking calculus this year. If students are placed in classes at random, then what is the percent chance that Camilla and Daniel will be in the same calculus class, but Elijah will be in a different calculus class?

**Lower Elementary:**

*Question:* Liam is choosing his outfit for the first day of school. He can’t decide between a red shirt, a blue shirt, and a yellow shirt. He also can’t decide between a pair of jeans and a pair of corduroys. How many different outfits can Liam make with these shirts and pants?

*Answer:* 6 outfits

*Solution:* We can solve this problem a few ways. Instead of mixing and matching and counting up the outfits one-by-one, we can reason that there are 3 shirts that Liam can wear with each pair of pants. So, there are 3 outfits with jeans + 3 outfits with corduroys = 6 outfits in total.

**Upper Elementary:**

*Question:* Ashley needs to buy spiral notebooks for school. NoteMart sells 2 spiral notebooks for $1.50. A+ Stationery sells spiral notebooks for 85¢ each. Hank’s Discount School Supplies sells 10 spiral notebooks for $8.00. Where should Ashley buy her notebooks if she wants the best deal?

*Answer:* NoteMart

*Solution:* Each notebook from NoteMart costs $1.50 ÷ 2 = 75¢. Each notebook from A+ Stationery costs 85¢. Each notebook from Hank’s Discount School Supplies costs $8.00 ÷ 10 = 80¢. Since 75¢ is the smallest cost per notebook, NoteMart has the best deal on spiral notebooks.



**Middle School:**

*Question:* It’s 7:45 am, and class starts at 8:05 am. Lily can run 6 kilometres per hour. If Lily is 3 kilometres away from school, can she run to school in time? If so, how much time will she have to spare? If not, how late will she be?

*Answer:* Lily will be 10 minutes late.

*Solution:* There are 20 minutes until class starts. Lily can run 6 kilometres in 60 minutes, which means she can run 1 kilometre in 60 ÷ 6 = 10 minutes. That means it’ll take her 10 × 3 = 30 minutes to run to school, which is 30 – 20 = 10 more minutes than she has. So, Lily will be 10 minutes late.

**Calculus and Up:**

*Question:* There are five calculus classes at East Grand Rapids High School. Camilla, Daniel, and Elijah are all taking calculus this year. If students are placed in classes at random, then what is the percent chance that Camilla and Daniel will be in the same calculus class, but Elijah will be in a different calculus class?

*Answer:* 16%

*Solution:* There is a 100% chance that Camilla will be in any calculus class, a 1 / 5 = 20% chance that Daniel will be in the same class, and a 4 / 5 = 80% chance that Elijah will be in one of the four other calculus classes. So, the percent chance that Camilla and Daniel will have the same calculus class but Elijah will not is 100% × 20% × 80% = 16%.