

# Joint and Combined Variation

Round your answer to two decimal places.

- 1) The IQ of a person varies directly as a person's mental age and inversely as that person's chronological age. Eric and Sam take up an online IQ test. Fifteen year old Eric has a mental age of 15 and secures an IQ of 100. Sam has a mental age of 24 and is chronologically 20 years old. Determine his IQ.

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- 2) The time taken to process a shipment in a retail organization varies directly with the number of items in the shipment and inversely with the number of workers. A group of 15 workers take 8 hours to complete a shipment of 24 items. How long will it take 40 workers to wrap up a shipment of 24 items?

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- 3) The volume of a pyramid varies directly with the square of its base length and inversely with its height. A pyramid that is 17 feet high has a base length of 10 feet. Find the volume of a pyramid that is 25 feet high and has a base length of 12 feet.

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- 4) A paediatrician prescribes a dosage of medicine that varies directly with the weight of the child and inversely with the number of doses. A child who weighed 40 pounds. The doctor prescribes 100 mg of medicine to be administered 4 times a day. How much medicine should be administered to a child who weighs 60 pounds and is administered 4 times a day?

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- 5) A summer camp for scouts was held in Pocono Mountains. A group of 8 scouts pitched 16 tents in 18 minutes. The time taken to pitch a tent varies directly with number of tents and inversely with number of scouts. How long will it take a troop of 36 scouts to set up a total of 144 tents?

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**Joint and Combined Variation**

Round your answer to two decimal places.

- 1) The IQ of a person varies directly as a person's mental age and inversely as that person's chronological age. Eric and Sam take up an online IQ test. Fifteen year old Eric has a mental age of 15 and secures an IQ of 100. Sam has a mental age of 24 and is chronologically 20 years old. Determine his IQ.

**120**

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- 2) The time taken to process a shipment in a retail organization varies directly with the number of items in the shipment and inversely with the number of workers. A group of 15 workers take 8 hours to complete a shipment of 24 items. How long will it take 40 workers to wrap up a shipment of 24 items?

**6.2 hours**

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- 3) The volume of a pyramid varies directly with the square of its base length and inversely with its height. A pyramid that is 17 feet high has a base length of 10 feet. Find the volume of a pyramid that is 25 feet high and has a base length of 12 feet.

**1041.67 cubic feet**

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- 4) A paediatrician prescribes a dosage of medicine that varies directly with the weight of the child and inversely with the number of doses. A child who weighed 40 pounds. The doctor prescribes a dosage of 3.6 mL of medicine to be administered 4 times a day.

**3.6 mL**

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- 5) A summer camp for scouts was held in Pocono Mountains. A group of 8 scouts pitched 16 tents in 18 minutes. The time taken to pitch a tent varies directly with number of tents and inversely with number of scouts. How long will it take a troop of 36 scouts to set up a total of 144 tents?

**36 minutes**

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