

8. A study shows that an office staff of “x” people will consume “y” cups of coffee over a period of “z” days. At this rate, how long would it take a staff of “3x” people to consume $\frac{y}{12}$ cups of coffee?
9. A worker is paid \$8.60/h for a 40h week and time and a half for overtime. How many hours are worked to earn \$414.95 in one week?
10. Jason can fill a water tank in 4 min using a large hose. He takes 6 min using a smaller hose. How long will he take if he uses both hoses?
11. Andrew can deliver 500 handbills in 2h. Amos can deliver the same number in 3h. How long will they take to deliver 500 handbills if they work together?

12. Mario can take inventory at the store in 30min. His partner, Carmen, can take inventory in 20min. If they work together, how long will the inventory take?
13. Driving between two towns at 110 km/h instead of 100 km/h saves 9 minutes. What is the distance in kilometres between the two towns?
14. Katie leaves school at the same time every day. If she cycles at 20 km/h, she arrives home at 4:30 in the afternoon. If she cycles at 10 km/h, she arrives home at 5:15 in the afternoon. At what speed, in km/h, must she travel to arrive home at 5:00 in the afternoon?
15. Ken and Mark are office cleaners. Ken earns \$10/h and takes 8hours to clean an office. Mark earn \$8/h and takes 10h to clean it. How long will it take Ken and Mark to clean the office together? What is the cost of cleaning the office using only Ken? Only Mark? Ken and Mark together?

16. Mike takes 3 hours to complete a task. Mike and Sam together takes 2 hours to complete the same task. How long will it take Sam to complete the task alone?
17. The ratio of x to y is $\frac{3}{4}$, and the ratio of x to z is $\frac{5}{6}$. What is the ratio of y to z ? Express your answer as a common fraction.
18. A rectangular field is 50% longer than it is wide. The perimeter of the field is 300 meters. What is the area of the field, in square meters.
19. Beth is one-fifth of the way through her cross-country race. After she runs a further three-quarters of a km, she will be one-quarter of the way through the race. Over how many km is the whole race?

20. Brenda and Sally run in opposite directions on a circular track, starting at diametrically opposite points. They first meet after Brenda has run 100 meters. They next meet after Sally has run 150 meters past their first meeting point. Each girl runs at a constant speed. What is the length of the track in meters?

21. Sam jogs at a steady rate of 5 minutes per kilometer. Ed jogs at 7 minutes per km. They start at the same time on an out and back run that consists of 15km due east followed by 15km due west. How many kilometers from the finish line is Sam when they pass next to each other? Give the answer correct to 1 decimal place.



22. A wolf can eat a lamb in $\frac{1}{4}$ of an hour. A bear can eat a lamb in $\frac{1}{5}$ of an hour. How many hours will it take the wolf and the bear, to eat a lamb if they dine together? (Assume that they will not attack each other). Express your answer as a common fraction.

23. Two candles of the same height are lit at the same time and both burn at a constant rate. The first is consumed in four hours, the second in three hours. What is the number of minutes after being lit will the height of the first candle be twice of the second candle?
- (a) 36 (b) 48 (c) 90 (d) 120 (e) 144
24. Bill and Jill are hired to paint a line on a road. If Bill works by himself, he could paint the line in "B" hours. If Jill works by herself, she could paint the line in "J" hours. Bill starts painting the line from one end, and Jill begins painting the line from the other end on hour later. They both work until the line is painted. Which of the following is an expression for the number of hours that Bill works?
- (A) $\frac{B(J+1)}{B+J}$ (B) $J+1$ (C) $\frac{BJ}{B+J}+1$ (D) $\frac{B+J-1}{2}$ (E) $\frac{B(J-1)}{B+J}$
25. Three painters can paint 4 houses in 5 days. To the nearest whole number of days, how long would it take 7 painters to paint 18 houses if all the work was done at the same rate all the time?
- (a) 3 (b) 4 (c) 7 (d) 10 (e) 18