1. The top shelf held 27 books. The bottom shelf held 43 books. 11 books from the top shelf were checked out. 6 books from the bottom shelf were missing. How many books are left on both shelves?

2. Use the chart below to find the average number of pages that Nick read each day of last week.

   Monday – 14  Tuesday – 23  Wednesday – 16  Thursday – 9  Friday - 18

3. Mrs. McKenna bought admission tickets to the zoo. She bought two adult tickets for $7.00 each. She bought three children’s tickets for $4.50 each. She paid for the tickets with three $10 bills. How much change did Mrs. McKenna receive?

4. The gift shop sold balloon bouquets of 7 multicoloured balloons. Audrey’s mom bought 3 balloon bouquets to decorate for a class party. How many balloons did Audrey’s mom buy?

Find the next number in each of the following:

5. 63, 65, 67, 69, ____
6. 44, 41, 38, 35, ____
7. 96, 48, 24, 12, ____
8. 10, 11, 13, 16, 20, ____

9. Find the number to replace the question mark:

   + 2 4 5
   5 7 9 10
   7 9 11 12
   8 10 13

10. Fill in the blank with the correct number.

    3 → 20
    5 → 32
    8 → 50
    9 → ____

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1. The top shelf held 27 books. The bottom shelf held 43 books. 11 books from the top shelf were checked out. 6 books from the bottom shelf were missing. How many books are left on both shelves?

1. 53 books

2. Use the chart below to find the average number of pages that Nick read each day of last week.

   Monday – 14          Tuesday – 23          Wednesday – 16          Thursday – 9          Friday – 18

2. 16 pages

3. Mrs. McKenna bought admission tickets to the zoo. She bought two adult tickets for $7.00 each. She bought three children’s tickets for $4.50 each. She paid for the tickets with three $10 bills. How much change did Mrs. McKenna receive?

3. $2.50

4. The gift shop sold balloon bouquets of 7 multicoloured balloons. Audrey’s mom bought 3 balloon bouquets to decorate for a class party. How many balloons did Audrey’s mom buy?

4. 21 balloons

Find the next number in each of the following:

5. 63, 65, 67, 69, ______  
   5. 71

6. 44, 41, 38, 35, ______  
   6. 32

7. 96, 48, 24, 12, ______  
   7. 6

8. 10, 11, 13, 16, 20, ______  
   8. 25

9. Find the number to replace the question mark:
   +  2  4  5  
   5  7  9  10
   7  9  11  12
   8  10  ?  13

   9. 12

10. Fill in the blank with the correct number.

   3  →  20

   5  →  32

   8  →  50

   9  →  ______  

   10. 56

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1. There are 356 animals at the Washington county Zoo. Three-fourths of these animals are adults; the rest are young animals. How many young animals live at the Washington county Zoo?

   1. _______________________

2. There are 277 children enrolled in Art camp. Each child will need four clothespins for an art project. The clothespins come in bags of 36. How many bags of clothespins will be needed for the project?

   2. _______________________

3. There are 70 grade five students at Rosewind Christian School. One out of every 5 of those students wears glasses. How many grade five students wear glasses?

   3. _______________________

4. Todd is reading a 287-page book. One week he read 65 pages. The next week he read 76 more pages. The third week he read 63 pages. How many more pages must Todd read to finish the book?

   4. _______________________

5. Brenna paid for a new glow-in-the-dark key chain with 7 quarters, 12 dimes, and 6 nickels. How much was the key chain?

   5. _______________________

6. Dana’s spelling scores for the past month are 93, 88, 86, and 97. Jack’s spelling scores for the same month are 89, 91, 94, and 86. Who has the higher average? What is it?

   6. _______________________

7. Mr. Troy is getting new carpeting in his classroom. His room measures 13 m x 11 m. How much carpeting in m^2 will be needed?

   7. _______________________

8. Emily goes to soccer practice twice a week. Each practice is 50 minutes long. The fall season is 8 weeks long. How much time will Emily spend in soccer practice during the fall season?

   8. _______________________

9. Mr. Dewitt bought 9 pieces of lumber that are each 2 m long. He is cutting the lumber into 150 cm pieces. How many pieces of lumber will Mr. Dewitt have?

   9. _______________________

10. Bennet sold pizzas for his school. \( \frac{3}{5} \) of the orders were for pepperoni, \( \frac{1}{3} \) of the orders were for sausage, and the rest of the orders were for veggie pizzas. What part of Bennet’s pizza orders were for veggie pizzas?

   10. _______________________

© 2005
1. There are 356 animals at the Washington county Zoo. Three-fourths of these animals are adults; the rest are young animals. How many young animals live at the Washington county Zoo?

   1. 89 young animals

2. There are 277 children enrolled in Art camp. Each child will need four clothespins for an art project. The clothespins come in bags of 36. How many bags of clothespins will be needed for the project?

   2. 31 bags

3. There are 70 grade five students at Rosewind Christian School. One out of every 5 of those students wears glasses. How many grade five students wear glasses?

   3. 14 grade five students

4. Todd is reading a 287-page book. One week he read 65 pages. The next week he read 76 more pages. The third week he read 63 pages. How many more pages must Todd read to finish the book?

   4. 83 more pages

5. Brenna paid for a new glow-in-the-dark key chain with 7 quarters, 12 dimes, and 6 nickels. How much was the key chain?

   5. $3.25

6. Dana’s spelling scores for the past month are 93, 88, 86, and 97. Jack’s spelling scores for the same month are 89, 91, 94, and 86. Who has the higher average? What is it?

   6. Dana, 91 average

7. Mr. Troy is getting new carpeting in his classroom. His room measures 13 m x 11 m. How much carpeting in m$^2$ will be needed?

   7. 143 m$^2$ or square metres or metres squared

8. Emily goes to soccer practice twice a week. Each practice is 50 minutes long. The fall season is 8 weeks long. How much time will Emily spend in soccer practice during the fall season?

   8. 13 hours 20 minutes

9. Mr. Dewitt bought 9 pieces of lumber that are each 2 m long. He is cutting the lumber into 50 cm pieces. How many pieces of lumber will Mr. Dewitt have?

   9. 36 pieces

10. Bennet sold pizzas for his school. $\frac{3}{5}$ of the orders were for pepperoni, $\frac{1}{3}$ of the orders were for sausage, and the rest of the orders were for veggie pizzas. What part of Bennet’s pizza orders were for veggie pizzas?

   10. $\frac{1}{15}$
1. $\frac{1}{4}$ of the wooden baskets held Macintosh apples, the rest held delicious. There were 51 baskets of delicious apples. How many bushels of apples were there altogether?

2. What is the greatest common factor of the following numbers? 12, 36, 54, 72, 90, 102

3. Together Ashley and Alison sold 80 candy bars. Ashley sold 14 more bars than Alison did. How many candy bars did Alison sell?

4. Zack’s dinner cost $6.87. Luke’s dinner cost $8.34. They wanted to give their waitress a tip that equalled 20% of their bill. How much money did they leave for their waitress?

5. The trains of the north shore line average 524 kilometres miles in four hours. At that rate, how many kilometres do they cover in three hours?

6. Laura bought 750 grams of baked ham that sold for $8.64 per kilogram. How much did the ham cost?

7. The Casper’s bought a refrigerator that was originally $914. A sale price gave them 30% off the original price. How much did they pay for the refrigerator?

8. Mrs. Austin wants to apply wallpaper to a wall that measures $4 \frac{1}{2}$ m by 2 m. The window on this wall is $1 \frac{1}{2}$ m by 1 m. How much wallpaper in m² will Mrs. Austin need to cover the wall?

9. Samantha gathered 28 tomatoes from her garden. Anna gathered twice as many. Michele gathered $\frac{3}{8}$ of the number that Anna gathered. How many tomatoes did Michele gather?

10. Mr. Jennings made $2437 at a craft fair this past weekend. Twenty-five percent of the total sales is his profit. Mr. Jennings is saving 5% of his profit for a new circular saw. How much money did Mr. Jennings put toward his saw from this weekend’s sales?

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1. \( \frac{1}{4} \) of the wooden baskets held Macintosh apples, the rest held delicious. There were 51 baskets of delicious apples. How many bushels of apples were there altogether?

1. 68 baskets

2. What is the greatest common factor of the following numbers? 12, 36, 54, 72, 90, 102

2. 6

3. Together Ashley and Alison sold 80 candy bars. Ashley sold 14 more bars than Alison did. How many candy bars did Alison sell?

3. 33 candy bars

4. Zack’s dinner cost $6.87. Luke’s dinner cost $8.34. They wanted to give their waitress a tip that equalled 20% of their bill. How much money did they leave for their waitress?

4. $3.04

5. The trains of the North Shore Line average 524 kilometres miles in four hours. At that rate, how many kilometres do they cover in three hours?

5. 393 km or kilometres

6. Laura bought 750 grams of baked ham that sold for $8.64 per kilogram. How much did the ham cost?

6. $6.48

7. The Casper’s bought a refrigerator that was originally $914. A sale price gave them 30% off the original price. How much did they pay for the refrigerator?

7. $639.80

8. Mrs. Austin wants to apply wallpaper to a wall that measures \( 4 \frac{1}{2} \) m by 2 m. The window on this wall is \( \frac{1}{2} \) m by 1 m. How much wallpaper in \( m^2 \) will Mrs. Austin need to cover the wall?

8. 8.5 or \( 8 \frac{1}{2} \) \( m^2 \) or square metres

9. Samantha gathered 28 tomatoes from her garden. Anna gathered twice as many. Michele gathered \( \frac{3}{8} \) of the number that Anna gathered. How many tomatoes did Michele gather?

9. 21 tomatoes

10. Mr. Jennings made $2437 at a craft fair this past weekend. Twenty-five percent of the total sales is his profit. Mr. Jennings is saving 5% of his profit for a new circular saw. How much money did Mr. Jennings put toward his saw from this weekend’s sales?

10. $30.46

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1. The Sawyer's drove 349 kilometres to their cabin for the weekend. They drove two separate cars, and both made round-trips. How many kilometres did the cars travel altogether? 

1. _______________________

2. The total number of dishes in 5 cases of cups and 9 cases of plates is 264. There are 24 cups in each case. How many plates are in each case? 

2. _______________________

3. Diana bought a new winter coat for $72.99. She paid a 25% down payment on the coat. From the time of purchase, she applied all of her babysitting money toward the coat; she was paid $3.50 an hour. How many hours did Diana have to baby-sit to pay for the rest of the coat? (Round to nearest whole hour.)

3. _______________________

4. There are 182 students at Bridgeport Christian School. Thirty-eight students ride the bus to school everyday. What percent of students ride the bus? (Round to nearest whole percent.)

4. _______________________

5. On a map scale, $\frac{1}{2}$ cm equals 124 kilometres. What is the distance between two cities that are $3\frac{1}{4}$ cm apart on the map?

5. _______________________

6. Mr. Porter is driving 376 kilometres on a business trip. By noon, he will be $\frac{5}{8}$ of the way to his destination. How many more kilometres must he drive?

6. _______________________

7. The number of books checked out of the Grangeville library last week was 849. The number of books checked out this week was 687. What is the percent of decrease between the two numbers?

7. _______________________

8. Miss Jansen is buying a computer for $1750. The store is offering her a 15% discount on the computer. She must also pay a 6% sales tax on this sale price. What is the final amount that Miss Jansen will pay for the computer?

8. _______________________

9. 207.2 is $\frac{4}{10}$ of a number. What is the number?

9. _______________________

10. Find the area of this window. ($A = \pi r^2$, $\pi = 3.14$)

10. _______________________

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1. The Sawyer’s drove 349 kilometres to their cabin for the weekend. They drove two separate cars, and both made round-trips. How many kilometres did the cars travel altogether?

   1. 1396 kilometres or 1396 km

2. The total number of dishes in 5 cases of cups and 9 cases of plates is 264. There are 24 cups in each case. How many plates are in each case?

   2. 16 plates

3. Diana bought a new winter coat for $72.99. She paid a 25% down payment on the coat. From the time of purchase, she applied all of her babysitting money toward the coat; she was paid $3.50 an hour. How many hours did Diana have to baby-sit to pay for the rest of the coat? (Round to nearest whole hour.)

   3. 16 hours

4. There are 182 students at Bridgeport Christian School. Thirty-eight students ride the bus to school everyday. What percent of students ride the bus? (Round to nearest whole percent.)

   4. 21%

5. On a map scale, \( \frac{1}{2} \) cm equals 124 kilometres. What is the distance between two cities that are \( \frac{3-1}{4} \) cm apart on the map?

   5. 806 kilometres/km

6. Mr. Porter is driving 376 kilometres on a business trip. By noon, he will be \( \frac{5}{8} \) of the way to his destination. How many more kilometres must he drive?

   6. 141 kilometres or km

7. The number of books checked out of the Grangeville library last week was 849. The number of books checked out this week was 687. What is the percent of decrease between the two numbers?

   7. 19%

8. Miss Jansen is buying a computer for $1750. The store is offering her a 15% discount on the computer. She must also pay a 6% sales tax on this sale price. What is the final amount that Miss Jansen will pay for the computer?

   8. $1576.75

9. 207.2 is \( \frac{4}{10} \) of a number. What is the number?

   9. 518

10. Find the area of this window. \( (A = \pi r^2, \pi = 3.14) \)

   10. 27.53 dm\(^2\) (or 2753.25 cm\(^2\) or 0.2753 m\(^2\))
Grade Eight Reasoning Sample Test

1. An airplane flight that covered 695 kilometres took 1 hour and 40 minutes. At what rate of speed did the airplane travel?

2. The town of Grangeville had above average rainfall every month of the year except June. What percent of the year did Grangeville have above average rainfall?

3. Mrs. Jenkins wants to carpet her living room that measures 6.5 m by 5 m the carpeting costs $150 per m². The store is having a sale in which there is a 40% discount on every square metre of carpeting over 25 m². How much will it cost Mrs. Jenkins to carpet the room?

4. Mrs. Carl spent $7.75 on breakfast. Afterward, she spent 1/4 of the money left in her wallet at the florist. She then had $8.50 left. With how much money did Mrs. Carl start?

5. The perimeter of a rectangle is 96 m. The rectangle is 4 m longer than it is wide. What are the length and width of the rectangle?

6. Mrs. Burns bought a computer for $2150. She paid $200 down payment at the time of purchase. She borrowed the rest of the money from a friend who charged her \( \frac{1}{2} \) % interest per month. At the end of the first month, Mrs. Burns paid back half the money she owed, plus interest. At the end of the second month, she paid the balance of what she borrowed, plus interest. How much was her second payment?

7. A plumber’s assistant worked \( 5 \frac{1}{2} \) hours on Wednesday, \( 4 \frac{3}{4} \) hours on Thursday, and \( 6 \frac{1}{4} \) hours on Friday. He makes $17.88 per hour. He worked the same hours last week, and is paid once every two weeks. He tithes 10% of his earnings and puts 5% of the remaining money into a savings account. How much money does he have left to spend?

8. The Smith family owns a chain of 12 restaurants. Each restaurant employs 113 people except three of the smaller restaurants, which employ 89 people. How many people do the Smith family employ?

9. Lisa is ordering table skirting to be hung on the edge of a round table that has a diameter of 145 dm. The table skirting is sold by the metre only. How many metres of skirting will Lisa need to order?

10. James invested $5000 in a 6-month GIC that earned 25% interest. At the end of the 6-month period, he took the money out of the GIC. How much money will he have at the end of this 6-month period?

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1. An airplane flight that covered 695 kilometres took 1 hour and 40 minutes. At what rate of speed did the airplane travel?
   1. 417 km/h

2. The town of Grangeville had above average rainfall every month of the year except June. What percent of the year did Grangeville have above average rainfall?
   2. 92%

3. Mrs. Jenkins wants to carpet her living room that measures 6.5 m by 5 m. The carpeting costs $150. per m². The store is having a sale in which there is a 40% discount on every square metre of carpeting over 25 m². How much will it cost Mrs. Jenkins to carpet the room?
   3. $4425

4. Mrs. Carl spent $7.75 on breakfast. Afterward, she spent 1/4 of the money left in her wallet at the florist. She then had $8.50 left. With how much money did Mrs. Carl start?
   4. $19.08

5. The perimeter of a rectangle is 96 m. The rectangle is 4 m longer than it is wide. What are the length and width of the rectangle?
   5. Length = 26 m Width = 22 m

6. Mrs. Burns bought a computer for $2150. She paid $200 down payment at the time of purchase. She borrowed the rest of the money from a friend who charged her \(1 \frac{1}{2}\)% interest per month. At the end of the first month, Mrs. Burns paid back half the money she owed, plus interest. At the end of the second month, she paid the balance of what she borrowed, plus interest. How much was her second payment?
   6. $989.63

7. A plumber’s assistant worked \(5 \frac{1}{2}\) hours on Wednesday, \(4 \frac{3}{4}\) hours on Thursday, and \(6 \frac{1}{4}\) hours on Friday. He makes $17.88 per hour. He worked the same hours last week, and is paid once every two weeks. He tithes 10% of his earnings and puts 5% of the remaining money into a savings account. How much money does he have left to spend?
   7. $504.48 or $504.49

8. The Smith family owns a chain of 12 restaurants. Each restaurant employs 113 people except three of the smaller restaurants, which employ 89 people. How many people do the Smith family employ?
   8. 1284 people

9. Lisa is ordering table skirting to be hung on the edge of a round table that has a diameter of 100 cm. The table skirting is sold by the metre only. How many metres of skirting will Lisa need to order?
   9. 4 metres/m

10. James invested $5000 in a 6-month GIC that earned 25% interest. At the end of the 6-month period, he took the money out of the GIC. How much money will he have at the end of this 6-month period?
   10. $5625

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