

FOR THE STUDENT

Comprehensive Assessment of Mathematics Strategies (CAMS Series) is a maths program that gives you practice with 12 maths strategies. In *Comprehensive Assessment of Mathematics Strategies, Book 6*, you will complete ten maths lessons. Each lesson has a maths theme and 12 questions about the theme. Each question provides you with practice of a particular maths strategy. After you have finished the first five lessons, you will complete a self-assessment. The self-assessment will help you determine how well you are doing and what goals you need to set to improve your maths skills. After you finish the last five lessons, you will complete another self-assessment. This self-assessment will help you determine how well you met your goals. *Comprehensive Assessment of Mathematics Strategies, Book 6* can help you become a better problem-solver. You will come to understand the important information you must look for as you prepare to solve any and all problems.

This *Comprehensive Assessment of Mathematics Strategies* book was prepared for students by Robert G. Forest.

Illustrations by Susan Hawk (top, pages 2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 31)

LESSON 1

Eric gets to the heart of the matter

Eric is preparing for the annual science competition. Last year, his science project took second prize. This year, he is researching information on the human heart, including data about the circulatory system, blood and disease. Now do numbers 1 to 12.



1. Eric learned that an average adult has about 5 litres of blood, containing more than 25 trillion red cells. Which of these expressions represents 25 trillion?

(A) 25×10^{10}
(B) 25×10^{11}
(C) 25×10^{12}
(D) 25×10^{14}

3. Eric created a 3-sided art display of the human heart for the science fair. He spent $3\frac{1}{2}$ hours completing the right-hand poster, $4\frac{2}{3}$ hours completing the middle poster and $5\frac{3}{5}$ hours completing the left-hand poster. How many hours did Eric spend creating the 3-sided display?

(A) $13\frac{13}{20}$ hours (C) $13\frac{23}{30}$ hours
(B) $12\frac{21}{30}$ hours (D) $12\frac{11}{30}$ hours

2. There are about 500 red cells to every one white cell in the human blood. Based on this information, estimate the number of red cells in a small sample of blood that contains 98 white cells.

(A) 50,000 red cells
(B) 5,000,000 red cells
(C) 5000 red cells
(D) 500,000 red cells

4. When Eric runs, his heart rate often reaches 152 beats per minute. At rest, his heart rate is usually 74 beats per minute. What is the difference in heart rate between the running Eric and the at-rest Eric?

(A) 68 beats (C) 66 beats
(B) 76 beats (D) 78 beats

5. At rest, Eric's heart rate is 74 beats per minute. At this rate, how many beats will Eric's heart complete in 24 hours?

- Ⓐ 206,650 beats
- Ⓑ 107,650 beats
- Ⓒ 206,560 beats
- Ⓓ 106,560 beats

7. According to Eric's doctor, the human heart pumps about 5 litres of blood per minute. How much time will a heart take to pump 650 litres of blood?

- Ⓐ 1 hour and 40 minutes
- Ⓑ 1 hour and 50 minutes
- Ⓒ 2 hours and 10 minutes
- Ⓓ 2 hours and 30 minutes

6. There are 28 students in Eric's class and 4 of them will work on a science project about the human heart. What percentage of the students will research information about the heart? Round your answer to the nearest percentage.

- Ⓐ 9%
- Ⓑ 11%
- Ⓒ 14%
- Ⓓ 17%

8. Eric learned that the average human heart is the size of a fist and weighs about 250–350 grams. What is the equivalent weight range in kilograms?



- Ⓐ 2.5–3.5 kg
- Ⓑ 0.25–0.35 kg
- Ⓒ 0.025–0.035 kg
- Ⓓ 0.35–0.35 kg

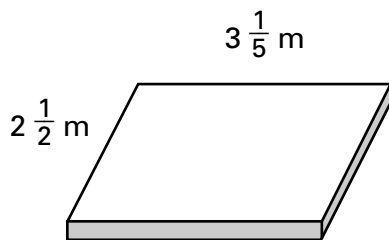
9. Eric learned that a single human body contains about 96,000 kilometres of blood vessels. When placed end to end, the blood vessels would extend around the earth about $2\frac{1}{2}$ times. Based on this information, which of these would you use to determine the approximate circumference of the earth?

- (A) $96,000 \text{ km} \div 2.5 = \square$
- (B) $96,000 \text{ km} - \square = 2.5$
- (C) $96,000 \text{ km} \times 2.5 = \square$
- (D) $\square \div 2.5 = 96,000 \text{ km}$

11. Eric entered a ball-throwing contest. He will throw 2 balls at a board and, if both balls hit the heart, Eric wins \$20.00. If only one ball hits the heart, he wins \$5.00. After much practice, Eric found that he hits the heart with 80% accuracy on the first throw. He found that he hits the heart with 50% accuracy on the second throw. What are Eric's chances of winning \$20.00?

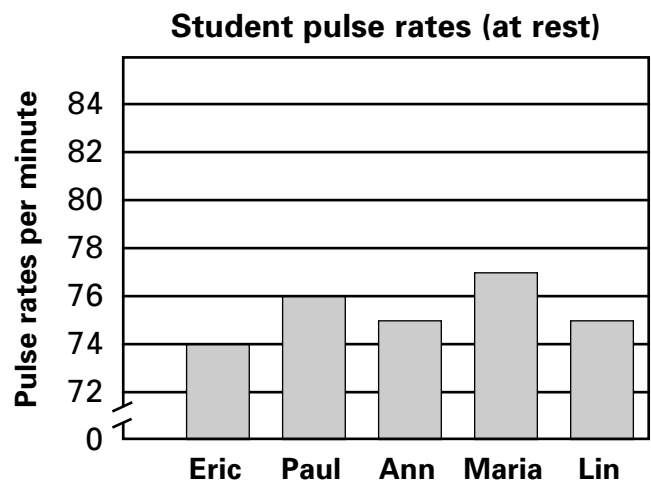
- (A) $\frac{2}{5}$
- (B) $\frac{1}{2}$
- (C) $\frac{4}{5}$
- (D) $\frac{3}{4}$

10. Eric is painting green a wooden base to hold his heart display. What is the area of the base?



- (A) $8\frac{1}{2} \text{ m}^2$
- (B) 8 m^2
- (C) 9 m^2
- (D) $9\frac{1}{2} \text{ m}^2$

12. Eric graphed the at-rest pulse rates of himself and 4 friends. What is the difference between the lowest and highest student pulse rates?



- (A) 2 beats
- (B) 4 beats
- (C) 5 beats
- (D) 3 beats

LESSON 2

Rachel and the stock market

Rachel and several other maths students at Perryvale School are studying the stock market. Ms Gomez guides the students as they select stocks, follow the progress of the stocks and buy and sell. They compute profit and loss on a daily basis. Each student started out with play money in the amount of \$5000 to finance their stock purchases. Now do numbers 1 to 12.



1. Rachel determined the value of the digit 6 in the market average. Which value did she correctly determine the digit 6 to be?

Market average 803.56

- (A) 6 hundred (C) 6 tens
(B) 6 hundredths (D) 6 tenths

3. You will need information from problem 2 to solve this problem.

After estimating the cost of the 3 stocks that she purchased, Rachel computed the actual cost. What was the actual cost to her, not including the fee for the transactions?

- (A) \$4378.50 (C) \$4276.10
(B) \$4392.40 (D) \$4383.30

2. Rachel purchased the following stocks: 20 shares of Cartel Oil at \$77.75 a share, 10 shares of Master Electric at \$112.94 a share, 30 shares of DuLong at \$56.63 a share. Calculate the amount Rachel spent for each company, then estimate the total cost of Rachel's purchases to the nearest \$100.

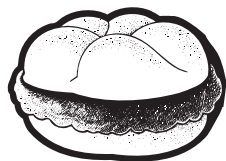
- (A) \$2800 (C) \$4200
(B) \$4400 (D) \$3200

4. Rachel bought 10 shares of Jet Air stock at \$59.38 a share and sold the stock at \$64.31 a share. There was no fee for the transaction. What was Rachel's profit?

- (A) \$49.30 (C) \$54.90
(B) \$48.90 (D) \$58.90

5. Rachel's friend, Alma, bought 25 shares of Ronald's Restaurant stock at \$43.75 a share. What did Alma pay for the 25 shares, not including the fee for the transaction?

- (A) \$995.00
- (B) \$993.75
- (C) \$1093.75
- (D) \$1095.00

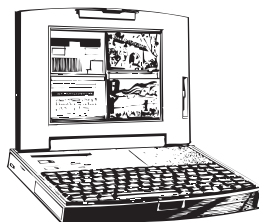


7. The stock exchange in Ms Gomez's classroom handles all purchases and sales. In one stock purchase, Rachel was required to pay a cost of \$957.03. She paid the cost in 20-dollar notes. How many 20-dollar notes did she need?

- (A) 52
- (B) 40
- (C) 36
- (D) 48

6. Rachel's father bought 350 shares of Dot Com Computer stock and paid a total of \$10,368.75. What was the cost of each share, rounded to the nearest cent?

- (A) \$35.75
- (B) \$30.38
- (C) \$29.63
- (D) \$27.75



8. The stock exchange is located in the rear of the classroom. Ms Gomez allotted a floor-space area for the exchange. If the length of the floor space is 327 centimetres and its width is 254 centimetres, what is the perimeter of the floor space in metres? Round your answer to the nearest tenth.

- (A) 11.6 m
- (B) 11.7 m
- (C) 5.8 m
- (D) 83.1 m

9. Rachel's holdings are 42% bonds and 58% stocks. This represents her investment of \$5000. Which equation below would you use to determine the amount of money that Rachel has invested in stocks?

- (A) $\square \div \$5000 = 0.58$
- (B) $0.58 + \square = \$5000$
- (C) $0.58 \times \$5000 = \square$
- (D) $\square - 0.58 = \$5000$

11. Rachel wrote the name of several different stocks on pieces of paper and placed the pieces in a box. The names represented 8 utility stocks, 12 industrial stocks, 6 Internet stocks and 10 transport stocks. If Rachel reaches into the box without looking and picks one piece of paper, what are the chances that she will select a transport stock?

- (A) $\frac{1}{6}$
- (B) $\frac{2}{9}$
- (C) $\frac{5}{18}$
- (D) $\frac{1}{2}$

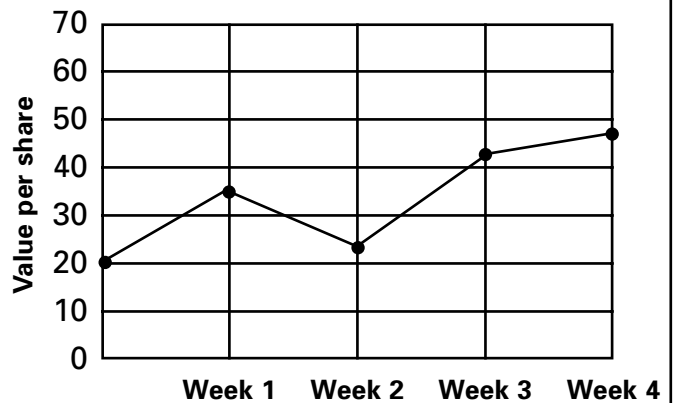
10.



Rachel made a sign to hang in the classroom stock exchange. Look at the sign above. What is the shape that Rachel chose for her sign?

- (A) hexagon
- (B) pentagon
- (C) octagon
- (D) septagon

12. When Rachel's friend, Alma, bought a computer stock, the price was \$30 per share. Alma tracked the stock for four weeks and noted its weekly average on a line graph. On which week was the value of each share of the stock worth \$10 less than the previous week?



- (A) Week 2
- (B) Week 4
- (C) Week 1
- (D) Week 3