

Mathematics

First Name

Last Name

School Name

Room Number / Class

Choose a circle to show how much each sentence is like you

Very Unlike Me 1	Unlike Me 2	Like Me 3	Very Like Me 4
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01. It is very important to me to be good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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02. I try to get more maths answers right than my friends.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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03. I like hard, challenging maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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04. I do as much school work as possible in maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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05. I like to help my friends with their maths school work.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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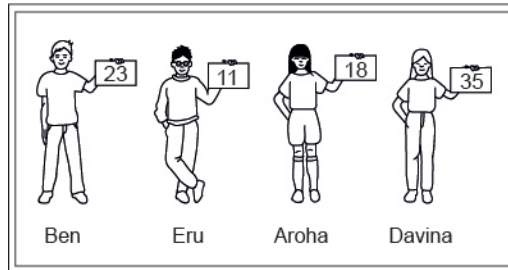
06. I like it when the maths examples are hard.

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Practice Questions

These practice questions are to help you understand how to show your answer for different types of questions.

P01. Who is holding a card with an even number on it?

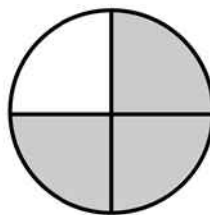


- Ben
- Eru
- Aroha
- Davina

P02. Complete this number pattern.

2, 4, _____, _____, 10

P03. What fraction of this circle is shaded?





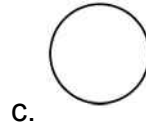
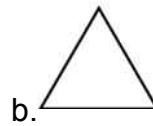
P04. Match the sentence with the correct shape.



1. I have three sides



2. I have 4 sides



P05. Which numbers make this number sentence **TRUE**?

$$2 + \star > 5$$

1

2

3

4

5

P06. Put the numbers 1, 2, 3, and 4 in the boxes to order these numbers from biggest (1) to smallest (4).



3



7



2



0

P07. Select whether the following statements are True or False.

In the number 213, the value of 1 is ten.

TRUE

FALSE

In the number 504, the value of 5 is fifty.

01. The Breakfast Barn bought 135 dozen eggs at \$0.89 per dozen. What was the total cost of the eggs?

- \$116.75
- \$120.15
- \$135.89
- \$151.69

02. $4\frac{3}{4} - 2\frac{1}{2} =$

- $1\frac{1}{4}$
- $1\frac{3}{4}$
- $2\frac{1}{4}$
- $2\frac{3}{4}$

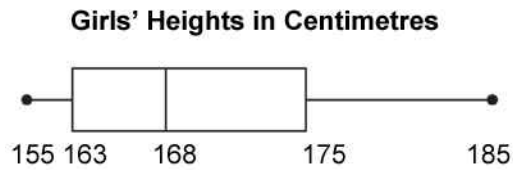
03. Calculate: $7^2 \times (9 - 4) + 10 \div 2 - 1$

- 225
- 249
- 441
- 735

04. There are 48 newborn girls in a hospital nursery. For every 3 girls there are 2 boys. How many newborn boys are in the nursery?

- 72
- 48
- 32
- 24

05. The box-and-whisker plot shown below represents the heights, in centimetres, of the members of the Central High School girls basketball team. What is the median height of the members of the team?



- 168 cm
- 170 cm
- 173 cm
- 175 cm

06. Tamika works in a shoe store and is paid 12% commission on her sales. In January her sales total was \$3740. To the nearest dollar, how much did Tamika earn in commission for January?

- \$312
- \$449
- \$3291
- \$4189

07. Which of the following sets of numbers represents an infinite set?

- {Natural numbers between 0 and 10}
- $\{\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}\}$
- {Whole numbers}
- {10, 9, 8}

08. Raewyn is a science fiction fan and wants to investigate the popularity of new science fiction books.

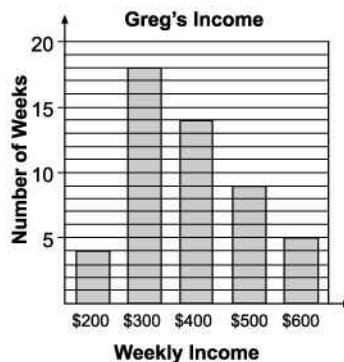
She thinks of several ideas for conducting her research.

The **BEST** of these ideas for her investigation would be to

- measure the proportion of the shelf space that science fiction books take up at the local library.
- obtain the attendance figures for science fiction movies at the local cinema for the past year.
- ask all the students in her class whether they like science fiction books.
- obtain information from the booksellers' association about the proportion of science fiction books sold.

09. Greg is self-employed, and his weekly income varies. The bar graph below displays the number of weeks in which he earned each of the amounts shown.

Based on the bar graph, what is Greg's median weekly income?



- \$300
- \$400
- \$500
- \$600

10. What is the value of $x^2(7 - x) + 2$ when $x = 5$?

- 52
- 100
- 152
- 172

11. The number of 250 millilitre bottles that can be filled from 400 litres of water is

- 16
- 160
- 1600
- 16 000

12. Olivia observed that, in 100 games of Roulette, black came up 35 times. For the next 40 games on the same wheel, how many would she expect to come up black?

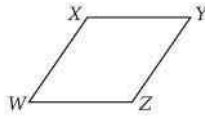
- 35/40
- 35
- 14
- 12
- 0.12

13. What is the value of the expression below?

$$(-1)^5 \times 2 \times 4^2$$

- 64
- 32
- 32
- 64

14. In the figure below, $WXYZ$ is a parallelogram. Which of the following is **NOT** necessarily true?



- Side WX is parallel to side ZY .
- Side XY is parallel to side WZ .
- The measures of angles W and Y are equal.
- The lengths of sides WX and ZY are equal.
- The lengths of sides WX and XY are equal.

15. What is the median of the numbers below?

4, 8, 3, 2, 5, 8, 12

- 4
- 5
- 6
- 7
- 8

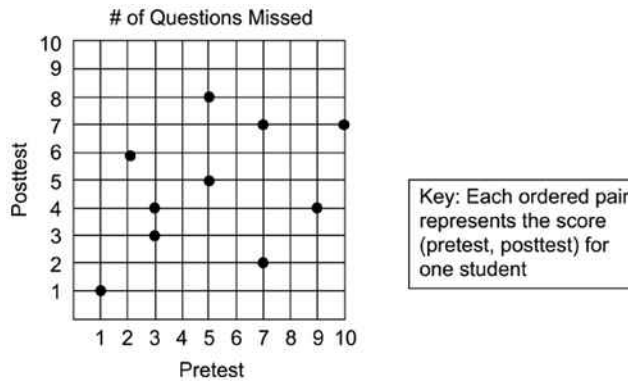
16. The expression below represents the amount of money in Jaime's savings account.

$$2000\left(1 + \frac{0.04}{2}\right)^3$$

Which of the following is closest to the amount of money in Jaime's savings account?

- \$2120
- \$2250
- \$6120
- \$6240

17. Ms Sandy made a scatter plot to compare the number of questions each student missed on the pretest and the posttest, as shown in the graph below. How many of Ms Sandy's 10 students missed the same number of question on both test?



- 2
- 4
- 8
- 10

18. Doreen is analysing a box-and-whisker plot that correctly shows the results of a poll in which a representative sample of people in Boston were asked to state their annual incomes.

Which of the following will Doreen be **unable** to determine from this box-and-whisker plot?

- The highest annual income among those polled
- The median annual income among those polled
- The mean annual income among those polled
- The lowest annual income among those polled

19. Soccer is the world's most popular sport. The table lists the records of five World Cup winners.

What was the mean number of total points scored by these teams?

Country	Games Won	Games Lost	Ties	Total Points
Argentina	24	15	9	57
Brazil	44	11	11	99
England	18	11	12	48
Italy	31	11	12	74
West Germany	39	14	15	93

- 51
- 74
- 74.2
- 99

20. Tania earned the following scores on her first 10 science tests:

73, 86, 91, 87, 88, 79, 82, 93, 90, 86

Which one of these will be changed if Tania earns a score of 50 on her next test?

- Mean, median and mode
- Mean and median
- Mean only
- Median only

21. Hilary has \$9 less than Barbara. Together they have \$21.

If x represents Barbara's money, which of the following expresses this relationship?

- $(x + 9) + x = 21$
- $(x - 9) + x = 21$
- $x - 9 = 21 + x$
- $x = 21 + x - 9$

22. What is the value of $\frac{y^2}{5} + y^2 - 12$, when $y = 5$?

- 13
- 16
- 18
- 22

23. The table shows the scores of 10 students on a final examination. What is the range of these scores?

Student	Score
A	88
B	65
C	91
D	36
E	72
F	57
G	50
H	85
I	62
J	48

- 55
- 63.5
- 65.4
- 91

24. 7, 7, 7, 7, 14

For the scores above, which one of the following does **NOT** equal seven?

- Mean
- Median
- Mode
- Range

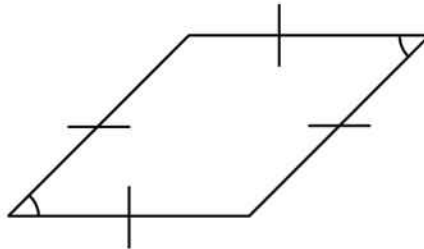
25. The box-and-whisker plot shown below represents 600 scores on a district geometry test.

How many students scored between 42 and 56?



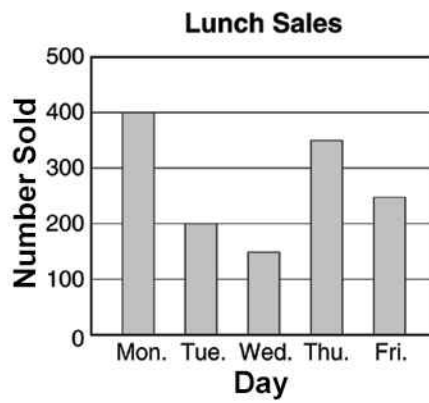
- 84
- 150
- 300
- 450

26. Which of the following terms could **NOT** be used to describe the polygon below?



- Quadrilateral
- Square
- Parallelogram
- Rhombus

27. What was the daily average (mean) number of lunches sold during the week?



- 225
- 250
- 270
- 290

28. A car has a fuel tank that holds 35 L of fuel. The car consumes 7.5 L of fuel for each 100 km driven. A trip of 250 km was started with a full tank of fuel. How much fuel remained in the tank at the end of the trip?

- 16.25 L
- 17.65 L
- 18.75 L
- 23.75 L

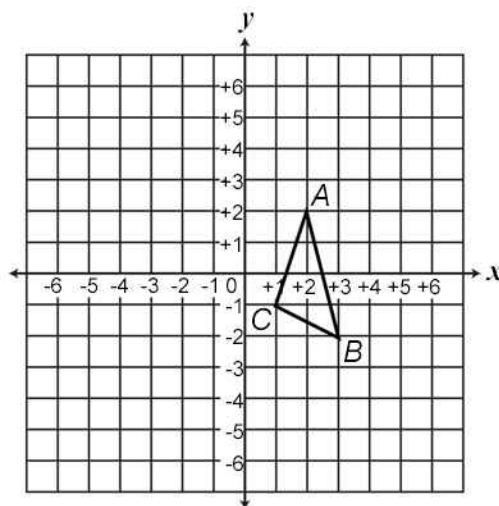
29. The chart below shows the approximate distances of various towns and cities from Williams.

Which is the **closest** to the mean of the seven distances listed in the chart?

Town or City	Distance (kilometres)
Ash Fork	19
Drake	36
Flagstaff	28
Red Lake	9
Seligman	42
Kingman	117
Parks	14

- 9 kilometres
- 28 kilometres
- 38 kilometres
- 40 kilometres

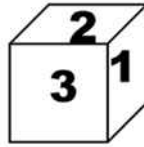
30. The diagram shows triangle ABC .



Which set of coordinates defines the reflection of triangle ABC over the y -axis?

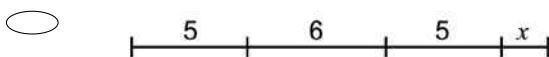
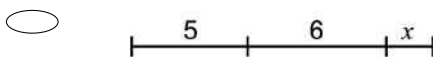
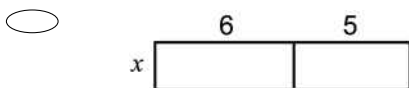
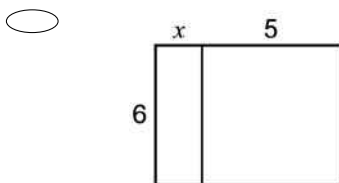
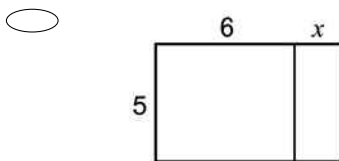
- $\{(-2, 2), (-1, -2), (-3, -1)\}$
- $\{(-2, 2), (-3, -2), (-1, -1)\}$
- $\{(2, -2), (3, 2), (1, 1)\}$
- $\{(2, -2), (-2, -3), (-1, -1)\}$

31. A cube numbered 1 through 6 is shown below.
 When the cube is tossed once, what is the probability that a number less than 4 shows on the top face of the cube?



- 1
- $\frac{2}{3}$
- $\frac{1}{2}$
- $\frac{1}{3}$

32. Which of the following figures **BEST** illustrates the following statement?
 $5 \times (6 + x) = (5 \times 6) + (5 \times x)$



33. If $n \times n = 729$, what does n equal?

$n =$ _____

34. What is the value of $x - (3x + 5)$ when $x = -2$?

- 1
- 1
- 5
- 9

35. In a vineyard there are 210 rows of vines. Each row is 192m long and plants are planted 4m apart. On average, each plant produces 9kg of grapes each season. The total amount of grapes produced by the vineyard each season is closest to:

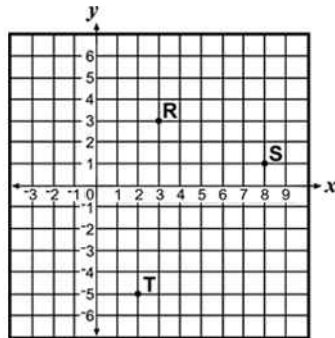


- 10 000 kg
- 100 000 kg
- 400 000 kg
- 1 600 000 kg

36. The diameter of a red blood cell, in centimetres, is 3×10^{-4} . This expression is the same as which of the following numbers?

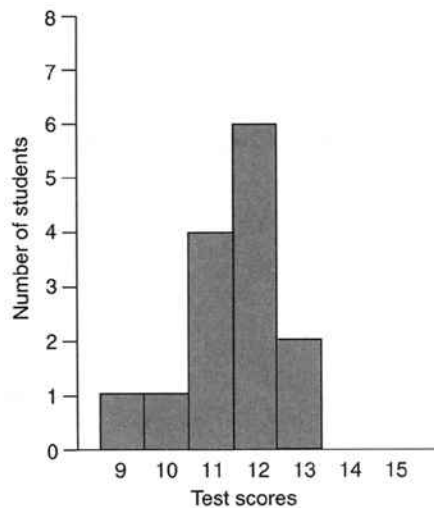
- 0.00003
- 0.0003
- 0.003
- 3000
- 30 000

37. QR and TS are the parallel sides of a trapezium QRST. The coordinates of three of its vertices are R(3, 3), S(8, 1), and T(2, -5). If (0, y) are the coordinates of Q, what is the value of y?



- 3
- 1
- 0
- 1

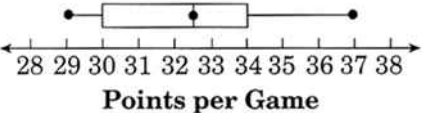
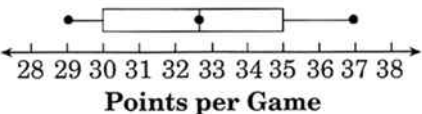
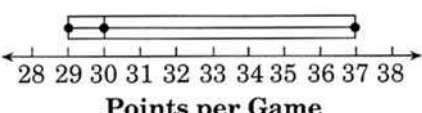
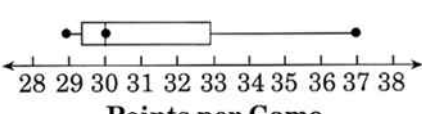
38. The results of a Year 10 Geography class test are shown in the frequency histogram below. For this data,



- the mode is 12 and the median is 11.
- the mode is 12 and the median is 12.
- the mode is 11 and the median is 11.
- the mode is 11 and the median is 12.

39. The ten best players in the NBA scored these average points per game.
30, 37, 35, 33, 34, 32, 30, 33, 30, 29

Which box plot accurately shows these averages?

- 
- 
- 
- 

40. Darrell had biology test scores of 76, 78, 76, 82, 62, and 100.
For this data, which measure is greatest?

- Mean
- Median
- Mode
- Range

41. Jerry attended a computer software conference.

- He paid \$12.00 for admission.
- He spent \$11.50 for lunch.
- He paid \$1.50 for each workshop ticket.

If Jerry had a total of \$35.00 to spend at the conference, which of the following inequalities could be used to determine n , the maximum number of workshop tickets that Jerry could have purchased?

- $1.50n \leq 35.00$
- $12.00 + 11.50 + 1.50n \leq 35.00$
- $35.00 + 1.50n \leq 12.00 + 11.50$
- $12.00 + 11.50 + 1.50 \leq 35.00n$

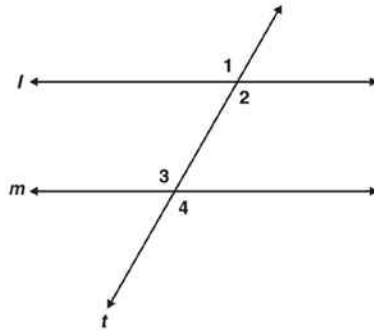
42. Which of the following statements about $\sqrt{121}$ is **NOT** true?

- $\sqrt{121}$ is an irrational number.
- $\sqrt{121}$ is an integer.
- $\sqrt{121}$ is a real number.
- $\sqrt{121}$ is a rational number.

43. If the perimeter of an isosceles triangle is 24 cm, which of the following cannot be the base?

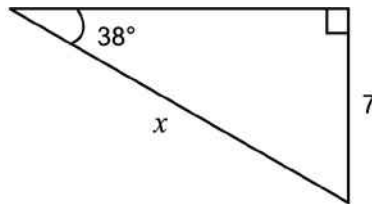
- 4 cm
- 6 cm
- 10 cm
- 12 cm

44. In the diagram below, $\angle 1 = \angle 4$.
Which of the following conclusions does **NOT** have to be true?



- $\angle 3$ and $\angle 4$ are supplementary angles.
- Line l is parallel to line m .
- $\angle 1 = \angle 3$
- $\angle 2 = \angle 3$

45. Which statement is **TRUE** for the given triangle?



- $x = 8 \cos 38$
- $x = \frac{7}{\sin 38}$
- $x = \frac{\tan 38}{7}$
- $x = 7 \sin 38$

46. Match each of the numbers with the number type.

- 6

$\sqrt{2}$

$\frac{3}{5}$

8

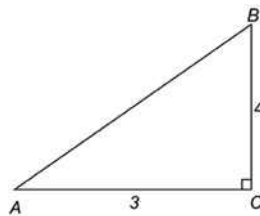
Whole

Irrational

Integer

Rational

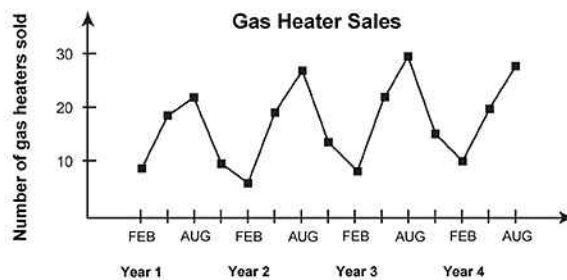
47. In the right triangle ABC below, $\cos A =$



- 3/5
- 3/4
- 4/5
- 4/3
- 5/3

Use the following information to answer question 48..

A department store sells gas heaters. At the end of every 3 month period they count the number sold. The data is shown in the graph.



48. What does this graph show us about the long term trends?

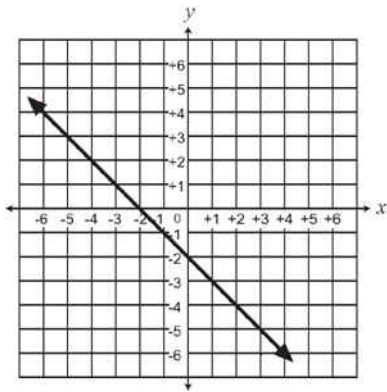
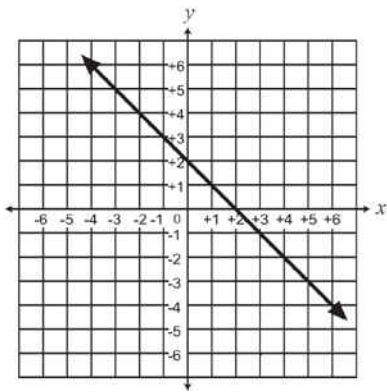
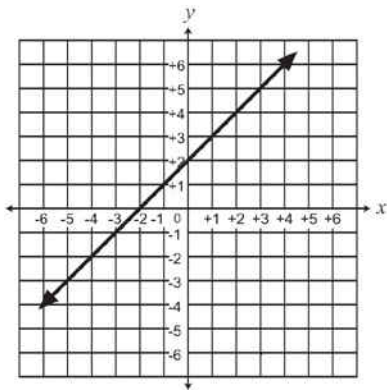
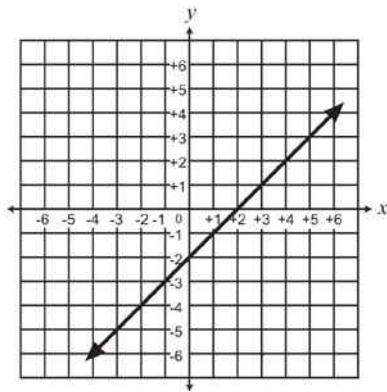
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End of Section

49. A florist buys red and white roses from the market. She counted 140 red roses and this was $\frac{7}{8}$ of the total.

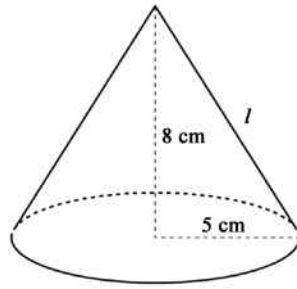
How many white roses were there?

_____ white roses

50. Which of the following is the graph of equation $y = x - 2$?



51. A right circular cone has radius 5 centimetres and height 8 centimetres.
What is the lateral area of the cone?
(Lateral area of cone = $\pi r l$, where l = slant height.)



- 40π sq cm
- 445π sq cm
- $5\pi\sqrt{39}$ sq cm
- $5\pi\sqrt{89}$ sq cm