Choose a circle to show how much each sentence is like you	Very Unlike Me	Unlike Me	Like Me	Very Like Me
	1	2	3	4
01. I like maths at school.	◯	◯	◯	◯
02. I am good at maths.	◯	◯	◯	◯
03. My teacher thinks I am good at maths.	◯	◯	◯	◯
04. My Mum and Dad think I am good at maths.	◯	◯	◯	◯
05. I enjoy doing maths in my own time (not at school).	◯	◯	◯	◯
06. I enjoy doing things in maths that I haven't tried before.	◯	◯	◯	◯

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?
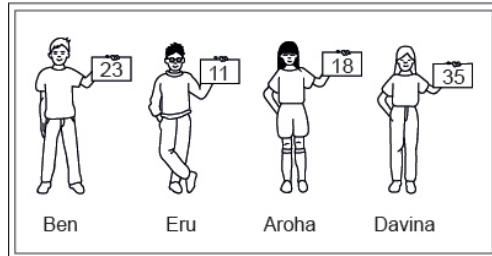
⬭   Ben

⬭   Eru

⬭   Aroha

⬭   Davina

P02. Complete this number pattern.

2, 4, ____, ____, 10

P03. What fraction of this circle is shaded?
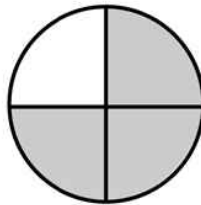
P04. Match the sentence with the correct shape.

☐ 1. I have three sides

☐ 2. I have 4 sides

a. ☐ (square)

b. △ (triangle)

c. ○ (circle)
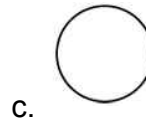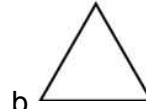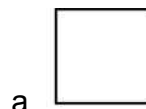
P05. Which numbers make this number sentence **TRUE**?

$$2 + ⭐ > 5$$

☐ 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.

	TRUE	FALSE
In the number 213, the value of 1 is ten.	◯	◯
In the number 504, the value of 5 is fifty.	◯	◯

01. Two-thirds of the people present at the beginning of a meeting are men. Nobody leaves but 10 more men and 10 more women arrive at the meeting.
Which of the following statements is **TRUE**?

○   There would then be more men than women at the meeting.

○   There would then be the same number of men as there are women at the meeting.

○   There would then be more women than men at the meeting.

○   From the information given, you cannot tell whether there would then be more women or men.

02. Year 7 is going to the zoo.
Zoo entry is $10.00 for each student.
The bus costs $75.00 for all students.

ZOO

If p represents the number of students, which one of the following shows the total cost of the trip?

○   (p + $10.00) + $75.00

○   (p x $10.00) + $75.00

○   (p x $75.00) x $10.00

○ p + ($75.00 + $10.00)

03. Karl needs to have his car towed to a repair shop. He received the estimates for towing below.
If the distance to the repair shop is 35 kilometres, what is the **LEAST** amount he could pay for towing?

Best Towing	$32 plus $2.00 per kilometre
Ace Towing	$26 plus $2.50 per kilometre
Bert's Towing	$50 for 0-20 kilometre
	$100 for 21-50 kilometre

- ⬭ $70.00
- ⬭ $82.50
- ⬭ $100.00
- ⬭ $102.00

04. Marti wants to buy a dress priced at $89.75.
If the tax is 8%, what is the total amount she must pay for the dress?

- ⬭ $71.80
- ⬭ $82.57
- ⬭ $96.93
- ⬭ $97.75

05. A 45 000 litre water tank is filled at the rate of 220 litres per minute.
Estimate, to the nearest half an hour, how long it will take to fill the tank.

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

06. In a bowling tournament, there were 2 scores in the 200's, 6 scores in the 180's, 5 scores in the 160's, 5 in the 150's, and 3 in the 130's.
The median score would be in the

○ 150's.

○ 160's.

○ 180's.

○ There is not enough information given.

07. A number rounded to 2 decimal places is 6.83.
The original number **COULD** have been

○ 6.835

○ 6.831

○ 6.8372

○ 6.8

08. Which of the following can be solved using the open sentence *B - 5* =

○ Dana bought just enough buttons to put five on each shirt she made. If *B* is the number of kinds of buttons she bought, how many shirts did Dana make?

○ Lana bought five of each kind of bagel a bakery had in stock. If *B* is the number of kinds of bagels the bakery had, how many bagels did Lana buy?

○ Carter sold five fewer boxes of cookies than Brad. If *B* is the number of boxes Brad sold, how many boxes of cookies did Carter sell?

○ Harry found five new bugs for his collection today. If *B* is the number of bugs he had yesterday, how many does he have now?

09. What are all the whole numbers that make 8 - ___ > 3 **TRUE**?

- ⬭ 0, 1, 2, 3, 4, 5
- ⬭ 0, 1, 2, 3, 4
- ⬭ 0, 1, 2
- ⬭ 5

10. In the scattergram, each dot represents one student who participated in the 50 metre race. Vicki won the race.
According to the scattergram, how old is Vicki?

Ages of Students and
Times in 50-Metre Race
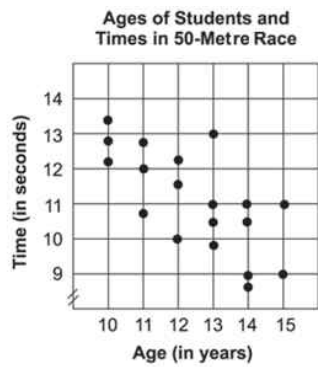
- ⬭ 10 years old
- ⬭ 13 years old
- ⬭ 14 years old
- ⬭ 15 years old

11. When the rectangle below is folded along the dotted line, point P will touch which of the lettered points?
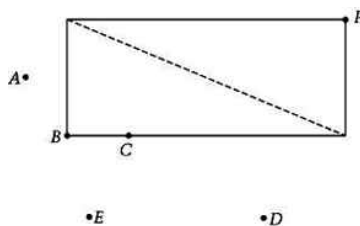
$\bigcirc$ A

$\bigcirc$ B

$\bigcirc$ C

$\bigcirc$ D

$\bigcirc$ E

12. The pie graph shown below represents the ages of the students at the Paterson Karate Studio. The degree measures for each sector are given.
Which of the following is the closest to the percent of students whose ages are 18 and under?
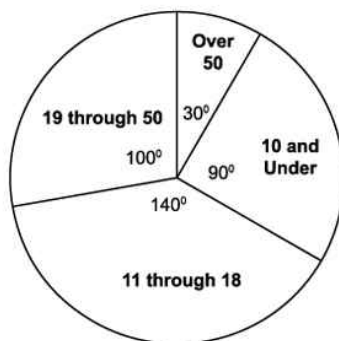
$\bigcirc$ 23%

$\bigcirc$ 61%

$\bigcirc$ 39%

$\bigcirc$ 64%

13. Mrs Adams walks between $\frac{4}{10}$ and $\frac{6}{10}$ kilometres every day.

Which is the **BEST** estimate of the number of kilometres she will walk in 30 days?

- ⬭   12
- ⬭   15
- ⬭   18
- ⬭   20

14. If $a + b = a$, then b equals

- ⬭   -1
- ⬭   0
- ⬭   1
- ⬭ $-a$

15. Ellen had some change in her pocket. After her friend gave her $0.45, Ellen had $1.35 altogether.

Which equation can she use to find the original amount of money, m, she had in her pocket?

- ⬭ $m + 0.45 = 1.35$
- ⬭ $1.35 = m - 0.45$
- ⬭ $m = 1.35 \times 0.45$
- ⬭ $m + 1.35 = 0.45$

16. What is the value of $6n(n - 1) + 4$, when $n = 3$?

- ⬭   44
- ⬭   40
- ⬭   36
- ⬭   19

17. $\left(\frac{2}{3}\right)^4 =$

○ $\frac{8}{81}$

○ $\frac{16}{81}$

○ $\frac{8}{3}$

○ $\frac{16}{3}$

18. A group of hikers climbed from Salt Flats (elevation -55 metres) to Talon Bluff (elevation 620 metres).
What is the difference in elevation between Talon Bluff and Salt Flats?

○   565 metres

○   575 metres

○   665 metres

○   675 metres

19. Which one of the follow statements is **TRUE**?

○ $5^2 > 6^2$

○ $6^3 > 5^4$

○ $6^3 = 5^4$

○ $4^3 = 8^2$

○ $3^3 = 4^2$

20. The following marks were scored by 9 students in a spelling test:
0, 1, 2, 2, 2, 3, 3, 6, 8
Two students who were absent did the test the following day. When their marks were included, the mean stayed the same but the mode changed.
What must their marks have been?

○ 3 and 3

○ 2 and 4

○ 1 and 5

○ 0 and 6

21. Of the following, which is the *closest* approximation of a 15 percent tip on a restaurant bill of $24.99?
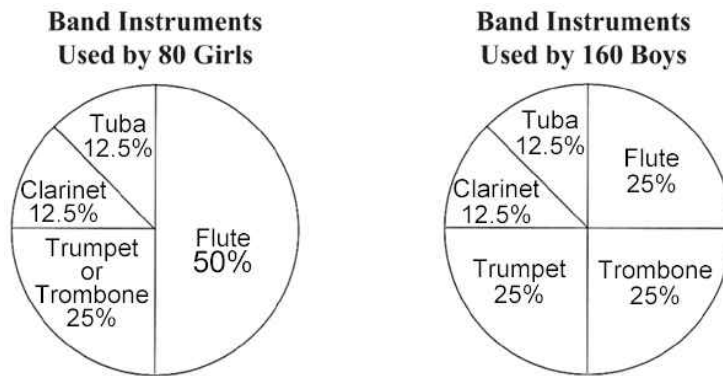
○ $2.50

○ $3.00

○ $3.75

○ $4.50

○ $5.00

22. Which of the following equations is **TRUE** for the three pairs of x and y values in the table below?

x	y
0	-3
1	-1
2	1

○ $y = 3x + 2$

○ $y = 3x - 2$

○ $y = 2x + 3$

○ $y = 2x - 3$

○ $y = x - 3$

23. According to these two circle graphs, which statement is correct?

Band Instruments
Used by 80 Girls

Band Instruments
Used by 160 Boys

◯ The same number of boys and girls play the tuba.

◯ The same number of boys and girls play the flute.

◯ The number of boys playing either the tuba or the clarinet is the same as the number of girls playing the tuba or the clarinet.

◯ Fifty girls play the flute.

24. The diagram shows a carpenter's square that is used to measure riser height and tread length. A carpenter has been asked to replace a staircase with one that is less steep. The carpenter could
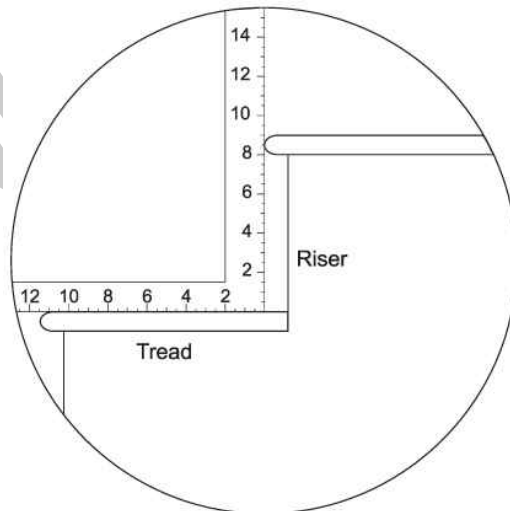

◯ increase the riser height leaving the tread length the same.

◯ increase the tread length leaving the riser length the same.

◯ increase the tread length and the riser height proportionally.

◯ decrease the tread length and the riser height proportionally.

25. A TV documentary showed this graph, and the reporter said: "There has been a huge increase in the number of robberies this year."
Was the reporter's statement a reasonable interpretation of the graph?
Choose the correct response:

Total Number of robberies reported per year
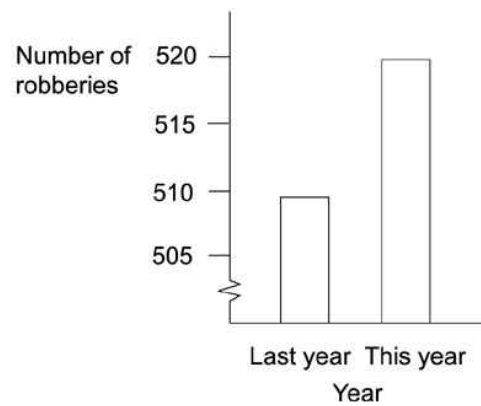
- ◯ Yes. There were 520 robberies this year.
- ◯ Yes. Robberies were double this year.
- ◯ No. Approximately 500 robberies are not very many.
- ◯ No. The graph shows a small overall increase in the number of robberies.

26. A new grocery store is having a grand opening celebration. Every third customer will receive a rose, and every fifth customer will receive a gift certificate.

How many of the first 100 customers will receive both a rose and a gift certificate?

- ◯ 6
- ◯ 10
- ◯ 16
- ◯ 20

27. The following graph shows the average number of patients seen by the emergency room staff on each night of the week for the past year.
Which is the **BEST** estimate of the average number of patients seen per night from Sunday through Thursday?

Average Number of Patients per Night
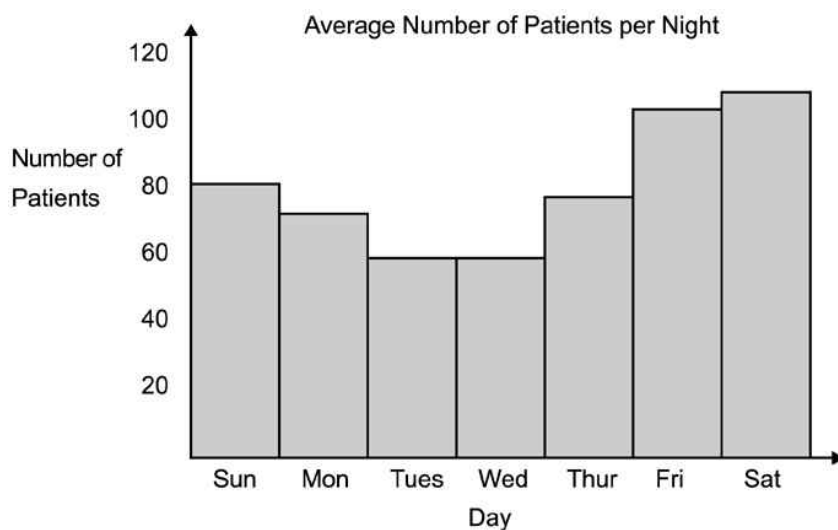
- 60
- 70
- 80
- 90
- 110

28. Tina had $2\frac{3}{8}$ pizzas. She kept $1\frac{3}{4}$ pizzas for her family and gave the rest to Yogi. How much pizza did Yogi get?

- $\frac{1}{4}$ of a pizza
- $\frac{5}{8}$ of a pizza
- $1\frac{3}{4}$ of a pizza
- $1\frac{5}{8}$ of a pizza

29. The graph shows the estimated number of computers in Russia from 1991 to 1996. If the rate of increase in the number of computers continues, which of the following gives the **BEST** estimate of the number of computers in Russia in the year 2000?

COMPUTERS IN RUSSIA
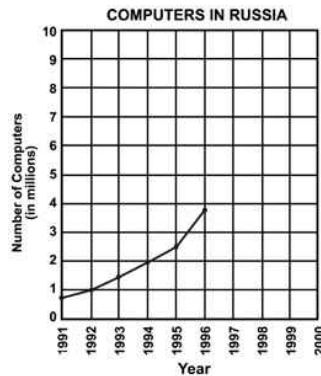
- ⬭ 3 to 5 million
- ⬭ 5 to 6.5 million
- ⬭ 6.5 to 7.5 million
- ⬭ Over 7.5 million

30. Four girls on a high school athletics team practised the shot put. Each girl made 10 attempts, and the distances measured after each attempt are shown on the line plots below.
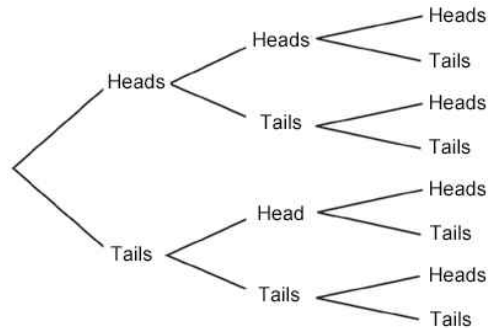Which girl's range of distances was the greatest?
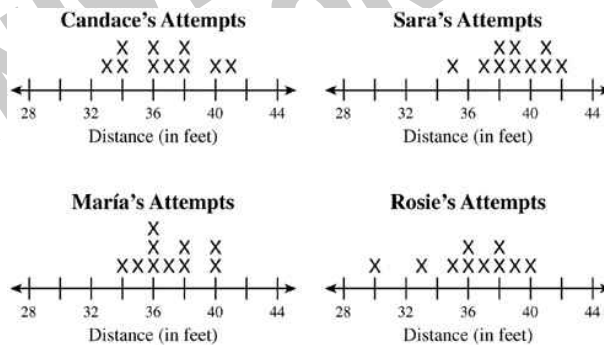
- ⬭ Candace
- ⬭ Maria
- ⬭ Sara
- ⬭ Rosie

31. Tess will toss a fair coin 3 times. The possible results are illustrated in the tree diagram below.

Based on the information given in the tree diagram, in how many ways (outcomes) can Tess toss *at least* 2 heads?

- ⬭ 2
- ⬭ 3
- ⬭ 4
- ⬭ 5

Use the following information to answer question32..

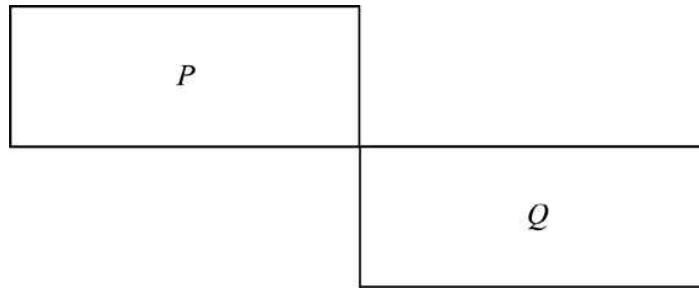A 100 litre tank filled with water leaked at a constant rate of 2 litres per hour.

The tank continued to leak, and when it was half full, it was filled again at a rate of 3 litres per hour.

32. Which graph best shows the capacity in the tank (litres) as a function of the time (hours)?

○

○

○

○
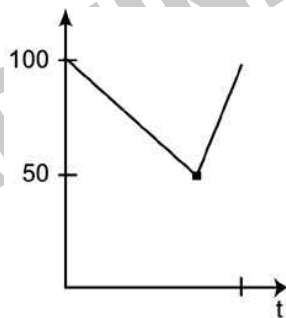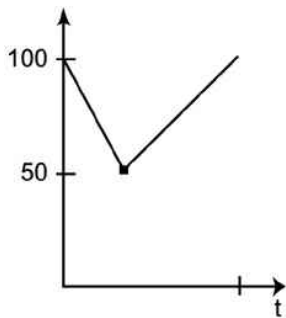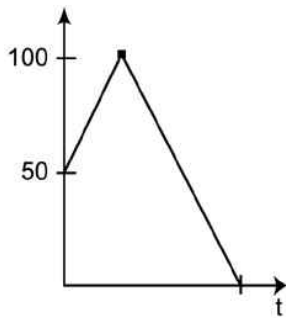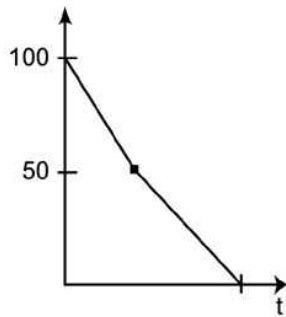
End of Section

33. The rectangle labelled *Q* **cannot** be obtained from the rectangle *P* by means of

◯   Reflection.

◯   Rotation.

◯   Translation.

◯   Translation followed by a reflection.

34. Kim observed that the price, in dollars, of a certain stock changed as follows.
First, the price increased by 4 dollars.
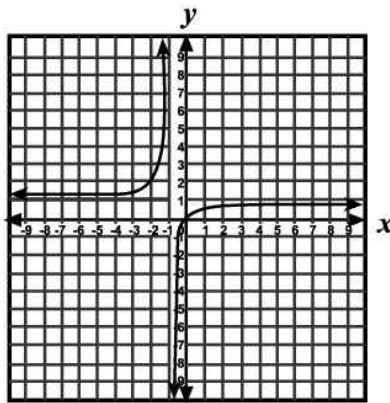Second, the price decreased by 7 dollars.
Third, the price increased by 2 dollars.
Finally, the price tripled.
If x represents the original price, in dollars, of this stock, which of the following represents its final price?

◯ $x - 1$

◯ $x + 13$

◯ $3(x + 13)$

◯ $3(x - 1)$

35. What is the value of the function at *x* = -2?

- ○ *y* = -1
- ○ *y* = 0
- ○ *y* = 1
- ○ *y* = 2

36. The height of a triangle is 4 centimetres greater than twice its base. The area of the triangle is 168 square centimetres.
What is the base of the triangle?

- ○ 7 cm
- ○ 8 cm
- ○ 12 cm
- ○ 14 cm

37. Each of 50 people bowled one game in a charity event at a bowling centre. The results of the games are shown in the chart below.
Which one of the following statements about the bowlers' scores is **TRUE**?

Bowlers' Scores

Score Range	Number of Bowlers
0 - 50	9
51 - 100	12
101 - 150	10
151 - 200	13
201 - 250	4
251 - 300	2

◯   6% of the bowlers scored more than 200

◯   52% of the bowlers scored less than 100

◯   The median score is between 51 and 100

◯   The median score is between 101 and 150

**38.** Julia and Marcia bought identically priced cans of chilli and identically priced jars of salsa to make a dip.
• Julia bought three cans of chilli and two jars of salsa for $10.07.
• Marcia bought two cans of chilli and four jars of salsa for $12.98.
Which of the following systems of equations could be used to find x, the cost of one can of chilli, and y, the cost of one jar of salsa?

◯ $x + y = 10.07$
        $x + y = 12.98$

◯ $10.07x + 12.98y = 11$
        $x + y = 11$

◯ $2x + 4y = 10.07$
        $2x + 3y = 12.98$

◯ $3x + 2y = 10.07$
        $2x + 4y = 12.98$

39. Use the information below to answer the question.

The figure below shows the construction of the angle bisector of angle $\angle$AOB using a compass.
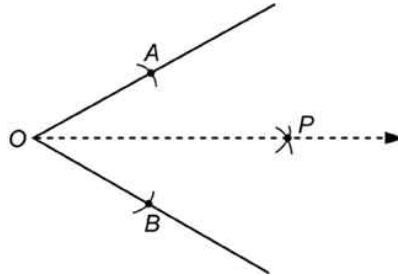
Which of the following statements must always be true in the construction of the angle bisector?
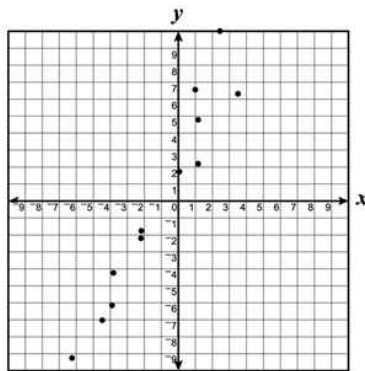
Fill in one oval to indicate YES or NO for each statement.

|	YES	NO
(a) $AO = OB$	◯	◯
(b) $AP = BP$	◯	◯
(c) $AB = BP$	◯	◯
(d) $OB = BP$	◯	◯

40. Which equation **BEST** represents the data shown in the scatter plot?


○ $y = 2x - 2$

○ $y = \frac{x}{2} - 2$

○ $y = 2x + 2$

○ $y = x - 1$

41. In order to stabilise a tightrope at a circus, a wire that has a length of 30 zeds is attached from the top of the vertical support at Point *A* to Point *B* on the ground. Point *B* is 10 zeds from the base of the vertical support as shown in the figure below.
Based on this information, which of the following is closest to the value of *h,* the height of the vertical support?
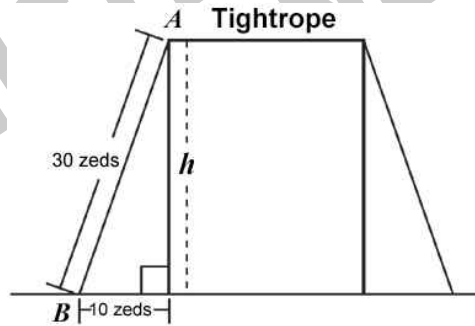
○ 16 zeds

○ 20 zeds

○ 28 zeds

○ 32 zeds

42. Which scatter plot **BEST** shows the relationship between a person's height and the time that person spends watching television?

○

○

○

○
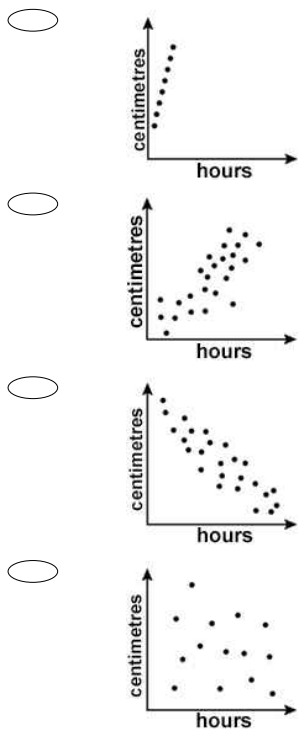
**43.** The table below shows the annual salaries of the 17 employees of a small software company.
What is the median salary of this group of employees?

Employee Salaries

| Employee Title	Number of Employees	Annual Salary Per Employee
President	1	$70 000
Vice President	1	$62 000
Sales Manager	1	$56 000
Programmer	6	$40 000
Technician	7	$30 000
Part-Time Trainee	1	$16 000

○ $30 000

○ $40 000

○ $43 000

○ $48 000

44. Amy drew a circle graph to represent the ages of people who were surveyed for a consumer group. Of those surveyed, 30% were over the age of 65.
Which one of the following graphs **BEST** represents the survey results?

30°
over
65

65°
over
65

108°
over
65

120°
over
65
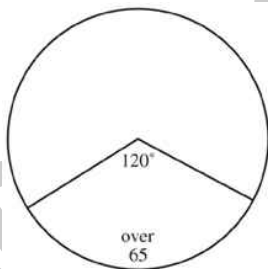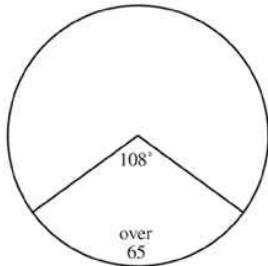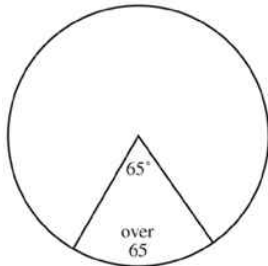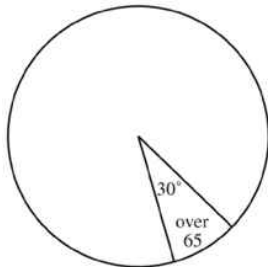
45. The value of *x* shown in the triangle, correct to two decimal places, is:
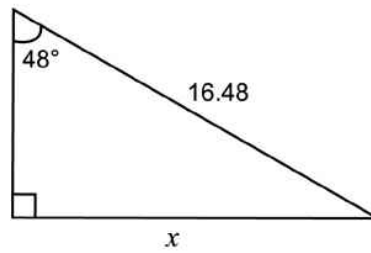
- ⬭ 12.25
- ⬭ 11.03
- ⬭ 18.30
- ⬭ 22.18
- ⬭ 13.24

46. The list shows the scores made by each member of Jaime's discussion group on the last test.

69, 79, 62, 93, 73, 81, 73, 78

Which box-and-whisker plot correctly displays the information?

47. In statistics, which of the words below **BEST** describes discrete data?

$\bigcirc$ Measured

$\bigcirc$ Continuous

$\bigcirc$ Countable

$\bigcirc$ Average