

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. I like maths at school.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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02. I am good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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03. My teacher thinks I am good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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04. My Mum and Dad think I am good at maths.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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05. I enjoy doing maths in my own time (not at school).

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
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06. I enjoy doing things in maths that I haven't tried before.

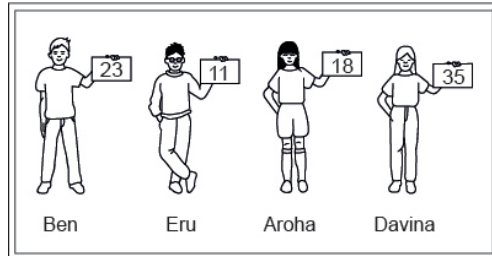
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Practice Questions

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?

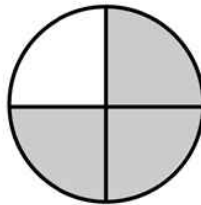


- Ben
- Eru
- Aroha
- Davina

P02. Complete this number pattern.

2, 4, _____, _____, 10

P03. What fraction of this circle is shaded?



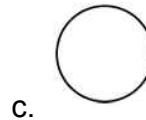
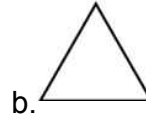
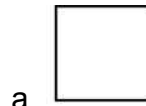
P04. Match the sentence with the correct shape.



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.

	TRUE	FALSE
In the number 213, the value of 1 is ten.	<input type="radio"/>	<input type="radio"/>
In the number 504, the value of 5 is fifty.	<input type="radio"/>	<input type="radio"/>

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01. Which row correctly shows equivalent fractions?

- $\frac{1}{2}, \frac{2}{4}, \frac{3}{4}$
- $\frac{2}{4}, \frac{4}{8}, \frac{8}{32}$
- $\frac{3}{4}, \frac{6}{8}, \frac{6}{16}$
- $\frac{2}{4}, \frac{3}{6}, \frac{4}{8}$

02. A cake is put in the oven at 7:20.

If the cake takes three quarters of an hour to bake, at what time should it be taken out of the oven?

_____ : _____

03. Amber and Charlotte each ran a kilometre. It took Amber 11.79 minutes. It took Charlotte 9.08 minutes.

Which number sentence can Charlotte use to **BEST** estimate the difference in their times?

- $11 - 9 = \square$
- $11 - 10 = \square$
- $12 - 9 = \square$
- $12 - 10 = \square$

04. Chen had \$10 to buy a model plane, glue, and paint as shown below. At which of the following times could an estimate have been used instead of exact numbers?



- When Chen tried to decide whether or not he had enough money to buy the plane, glue, and paint
- When the clerk entered each amount into the cash register
- When the clerk told Chen how much he owed
- When Chen counted his change

05. If the two scales shown are balanced, then which scale below is also balanced?

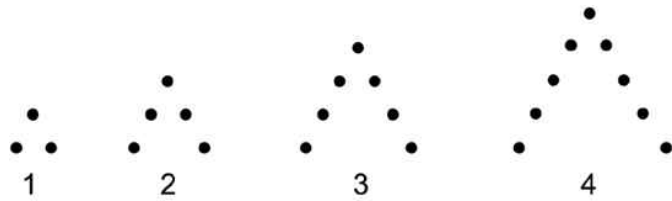


-
-
-
-

06. Three brothers, Bob, Dan, and Mark, receive a gift of 45 000 zeds from their father. The money is shared between the brothers in proportion to the number of children each one has. Bob has 2 children, Dan has 3 children, and Mark has 4 children. How many zeds does Mark get?

- 5000
- 10 000
- 15 000
- 20 000

07. If this pattern of dot-figure is continued, how many dots will be the 100th figure?



- 100
- 101
- 199
- 200
- 201

08. Which expression correctly represents \$10 less than twice the cost, c ?

- $10 - 2c$
- $10 - 2 + c$
- $2c - 10$
- $\frac{c}{2} - 10$

09. A journalist is interested in estimating the percentage of Massachusetts residents who support the use of state tax dollars to pay for a new civic centre in Springfield. Which of the following would result in the **MOST** reliable estimate?

- Survey 100 randomly selected civic centre board members.
- Survey 100 randomly selected Boston residents.
- Survey 100 randomly selected Springfield residents.
- Survey 100 randomly selected Massachusetts residents.

10. A family of five went out to dinner. Their bill was \$70.00. They left a 15% tip on the total cost of their bill.

Which amount is **closest** to the total cost of the dinner, including tip?

- \$90.00
- \$80.00
- \$75.00
- \$11.00

11. Alyce has 36 marbles in a bag, all the same size and shape. There are 12 red, 14 blue and 10 yellow marbles in the bag. She will select a marble from the bag at random.

What is the probability that the marble Alyce selects will be red?

- $\frac{1}{3}$
- $\frac{1}{36}$
- $\frac{7}{18}$
- $\frac{5}{18}$

12. A rock that weighed 1.2 kilograms on the moon weighed 7.06 kilograms on Earth. About how much would a lion which weighs 87 kilograms on Earth weigh on the moon?

- 7.25kg
- 12.325 kg
- 14.79 kg
- 511.77 kg

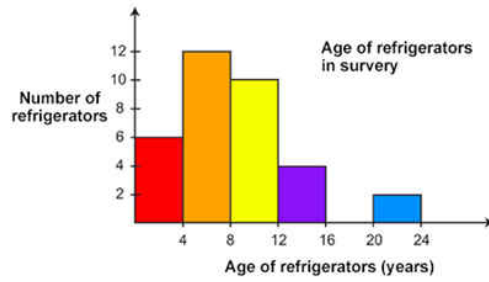
13. According to the graph below, how many times did the yearly increase of the price of a hamburger exceed 10 cents?



- None
- One
- Two
- Three
- Four

Use the following information to answer question 14..

This histogram shows the result of a survey of the ages of refrigerators, chosen at random, in Picton.

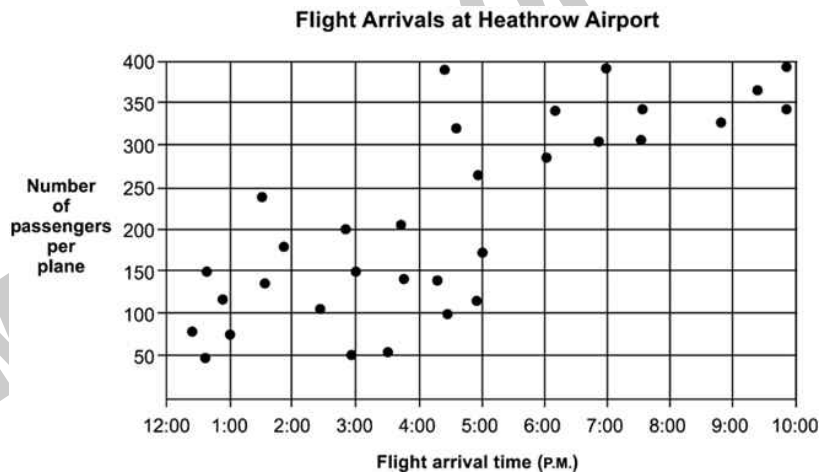


14. What is the modal age group for this data?

End of Section

Use the following information to answer question 15..

The number of passengers on each plane landing at an airport is recorded and shown below.



15. The scatter plot shows that

- fewer planes land in the afternoon than in the evening.
- there are more passengers per plane in the evening than in the afternoon.
- more planes land in the evening than in the afternoon.
- there are more passengers per plane in the afternoon than in the evening.

End of Section

16. Abe found the mean and median of this list of numbers.

1, 3, 3

If the number 6 were added to the list, then

- the mean would increase.
- the mean would decrease.
- the median would increase.
- the median would decrease.

17. This shows all the different ways a pair of number cubes can land in a game Robbie is playing.

To win on his next turn, he needs to roll an 8.

What is the probability that Robbie will win on his next turn?

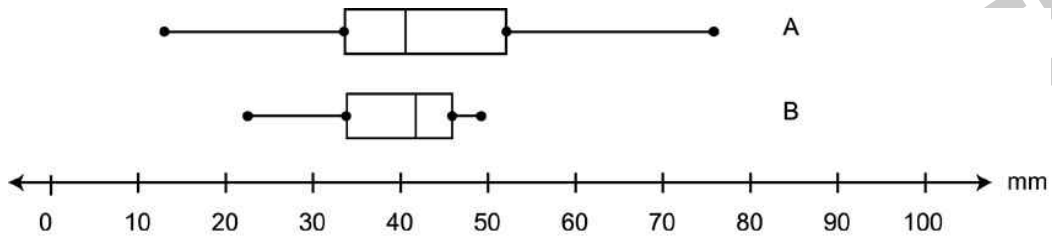


- $\frac{5}{36}$
- $\frac{4}{72}$
- $\frac{3}{36}$
- $\frac{5}{35}$

18. The vice president of sales took a client out to lunch.
If the lunch was \$44 and she gave a 20% tip, how much money did she spend on lunch?

- \$8.80
- \$35.20
- \$52.80
- \$53.80

19. The box plots show the scores gained by two mathematics classes.
Which of the following statements is a correct comparison of the data?

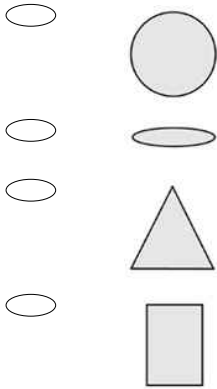


- Class A has a higher median and shows more variability than Class B.
- Class A has a lower median and shows more variability than Class B.
- Class A has a higher median and shows less variability than Class B.
- Class A has a lower median and shows less variability than Class B.

20. A certain machine produces 300 nails per minute.
At this rate, how long will it take the machine to produce enough nails to fill 5 boxes of nails if each box will contain 250 nails?

- 4 min
- 4 min 6 sec
- 4 min 10 sec
- 4 min 50 sec
- 5 min

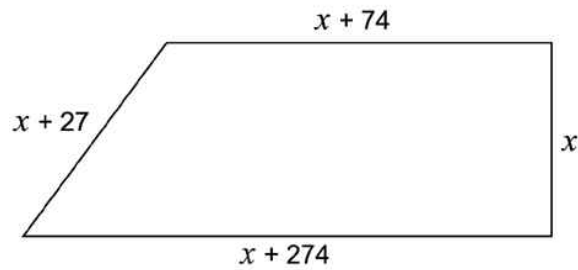
21. A right circular cone is represented by the drawing below.
Which figure could **NOT** be a cross section of a right circular cone?



22. Keith uses this formula to calculate the monthly profit of his bicycle store.
 $P = 400n - 7200$
In the formula, P is the monthly profit and n is the number of bicycles sold in a month.
How many bicycles must he sell to make a profit of exactly \$2000 in a month?

- 13 bicycles
- 17 bicycles
- 23 bicycles
- 25 bicycles

23. Tambria's property has the shape of a trapezium with the dimensions shown. If the perimeter of the property is 3279 metres, what is the value of x ?



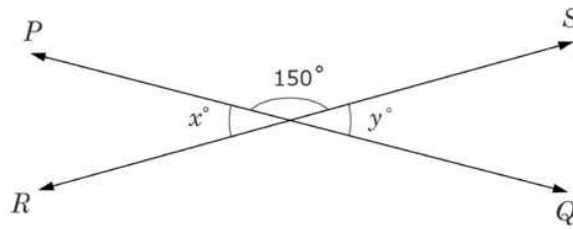
- 726 m
- 781.25 m
- 913.5 m
- 1452 m

24. The chart shows how the wholesale price of an item, p , depends on the cost of the materials needed to produce the item, m . Which equation represents this linear relationship?

m	\$0.50	\$1.00	\$1.50	\$2.00
p	\$4.00	\$5.00	\$6.00	\$7.00

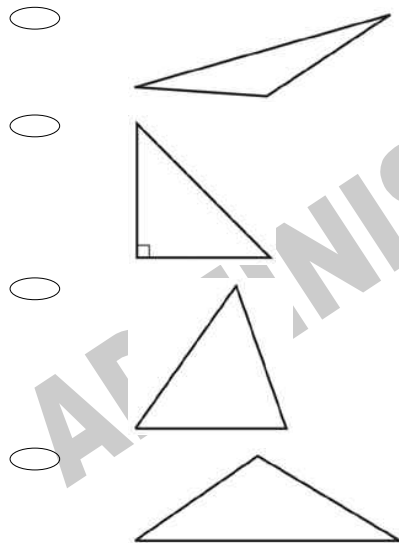
- $p = m + 3.5$
- $p = 2m + 3$
- $p = 3m + 2.5$
- $p = 4m + 2$

25. In the figure, PQ and RS are intersecting straight lines. What is the value of $x + y$?

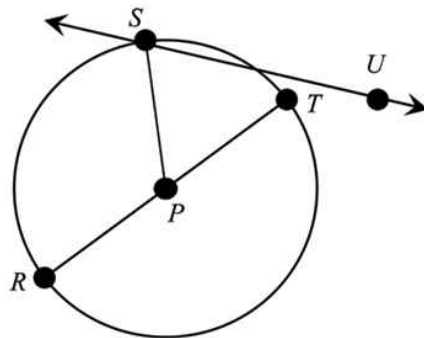


- 15
- 30
- 60
- 180
- 300

26. Which figure is an acute angled triangle?



27. Points R , S and T lie on the circumference of the circle. Which two points are endpoints of an arc on the circle?



- S and R
- S and U
- P and S
- P and T

28. In a certain forest, there are approximately 3 aspen trees for every 2 spruce trees. Forest rangers estimate that the forest contains about 300 000 trees that are either aspen or spruce.

Which of the following is closest to the number of spruce trees in the forest?

- 60 000
- 120 000
- 180 000
- 240 000

29. The chart below shows how the cost (c) of a wedding depends on the number of people (n) attending the reception. Which equation **BEST** represents this relationship?

n	10	25	50	100
c	\$900.00	\$1500.00	\$2500.00	\$4500.00

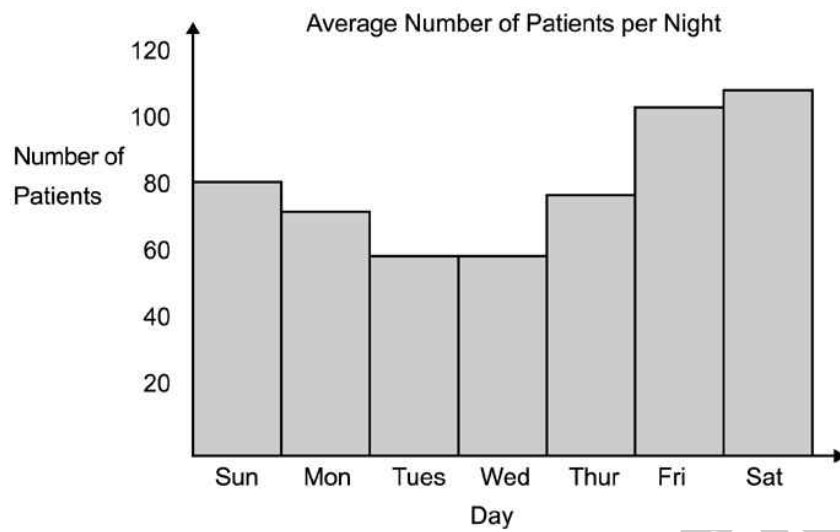
- $c = 20n + 700$
- $c = 30n + 600$
- $c = 40n + 500$
- $c = 50n + 400$

30. Akira read from a book on Monday, Tuesday, and Wednesday. He read an average of 10 pages per day.

Indicate whether each of the following is **possible** or **not possible**.

	Pages Read				
Monday	Tuesday	Wednesday	Possible	Not possible	
4 pages	4 pages	2 pages	<input type="radio"/>	<input type="radio"/>	
9 pages	10 pages	11 pages	<input type="radio"/>	<input type="radio"/>	
5 pages	10 pages	15 pages	<input type="radio"/>	<input type="radio"/>	
10 pages	15 pages	20 pages	<input type="radio"/>	<input type="radio"/>	

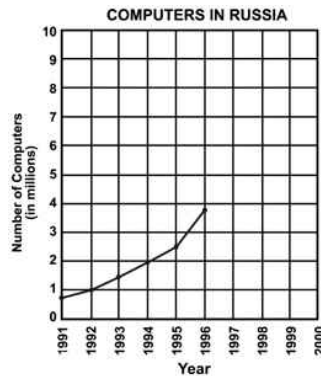
31. The following graph shows the average number of patients seen by the emergency room staff on each night of the week for the past year. Which is the **BEST** estimate of the average number of patients seen per night from Sunday through Thursday?



- 60
- 70
- 80
- 90
- 110

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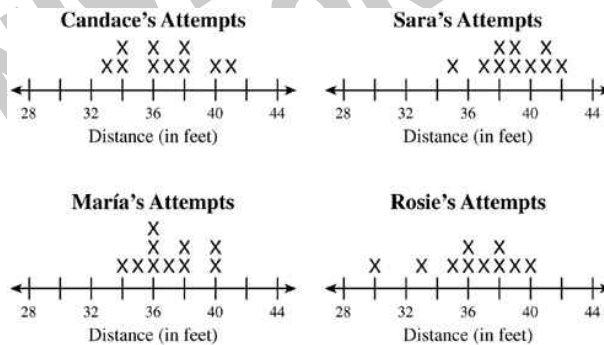
32. The graph shows the estimated number of computers in Russia from 1991 to 1996. If the rate of increase in the number of computers continues, which of the following gives the **BEST** estimate of the number of computers in Russia in the year 2000?



- 3 to 5 million
- 5 to 6.5 million
- 6.5 to 7.5 million
- Over 7.5 million

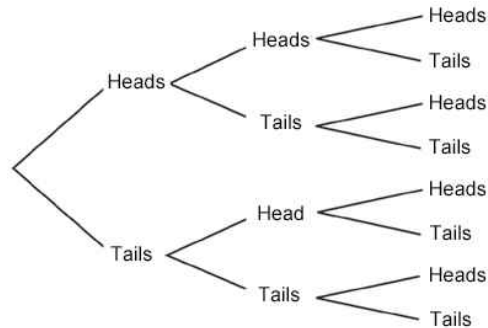
33. Four girls on a high school athletics team practised the shot put. Each girl made 10 attempts, and the distances measured after each attempt are shown on the line plots below.

Which girl's range of distances was the greatest?



- Candace
- Maria
- Sara
- Rosie

34. 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?



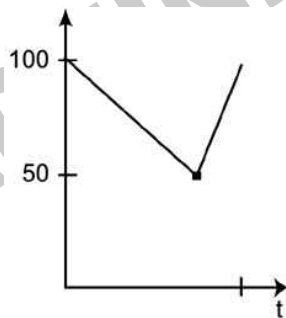
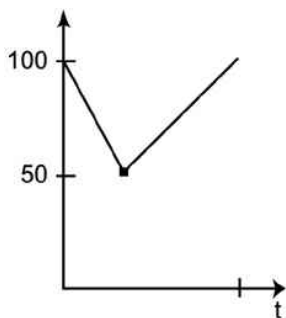
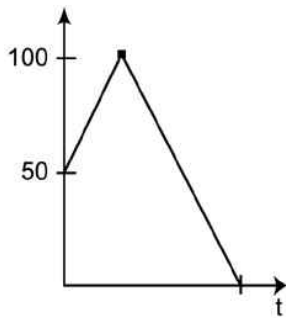
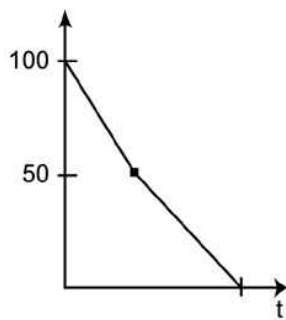
- 2
- 3
- 4
- 5

Use the following information to answer question 35.

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.

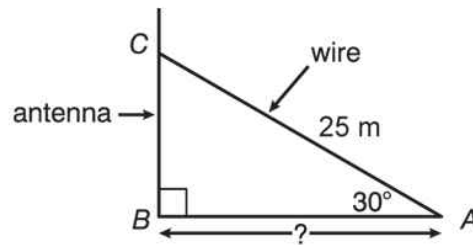
35. Which graph best shows the capacity in the tank (litres) as a function of the time (hours)?



End of Section

36. A 25 metre wire attached to an antenna makes a 30° angle with the level ground, as shown below.

What is the approximate distance from the base of the antenna to the place where the wire is staked to the ground?



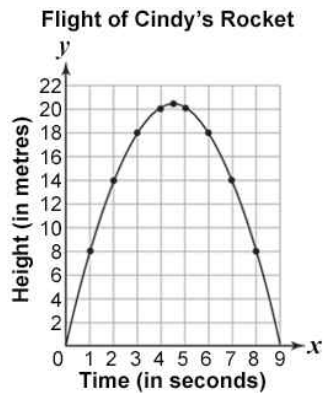
- 22 m
- 18 m
- 13 m
- 28 m

37. Which of the following is closest to the value of $\frac{7-\sqrt{2}}{2}$?

- 1.1
- 2.8
- 6.0
- 6.3

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38. The graph below shows the height of Cindy's model rocket during the course of its flight.
Which of these equations can be used to find the height of the rocket at any time during its flight?



- $y = 9x$
- $y = x^2 - 81$
- $y = -x^2 + 9x$
- $y = 9 - 9x^2$

39. 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?

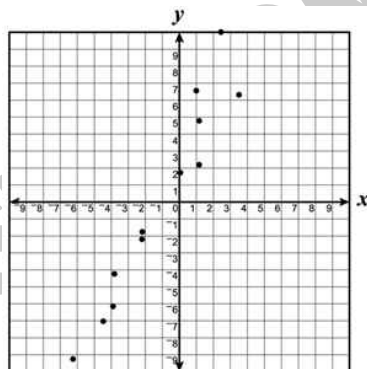
- 7 cm
- 8 cm
- 12 cm
- 14 cm

40. 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**?

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

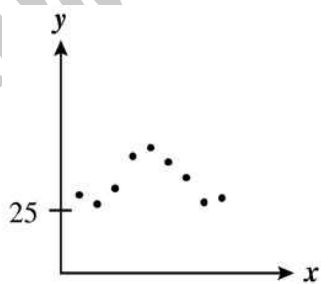
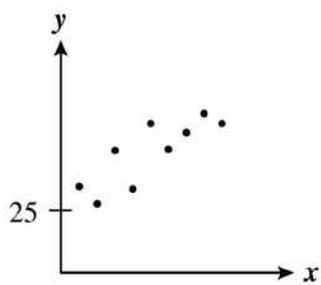
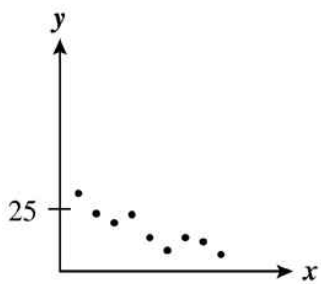
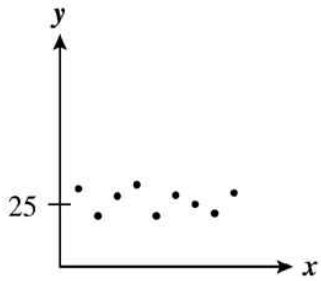
- 6% of the bowlers scored more than 200
- 52% of the bowlers scored less than 100
- The median score is between 51 and 100
- The median score is between 101 and 150

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



- $y = 2x - 2$
- $y = \frac{x}{2} - 2$
- $y = 2x + 2$
- $y = x - 1$

42. Which of the following scatterplots shown below would be **BEST** represented by a line of best fit (trend line) with the following equation?
 $y = 25$



43. A parking garage charges \$2.00 for the first hour and \$0.80 for each additional hour. Which of the following could be used to find C , the cost in dollars of parking h hours?

- $C = 0.80(h - 1) + 2$
- $C = 2(h - 1) + 0.80$
- $C = 2.80(h - 1)$
- $C = 3.60(h - 1)$

44. Tykwan guides groups on bush walks. He is paid \$15 per group for the short walks and \$20 per group for the long walk.

If 80% of Tykwan's groups take the short walk, what is the total number of groups he must guide to earn a total of \$400?

- 5
- 12
- 20
- 25

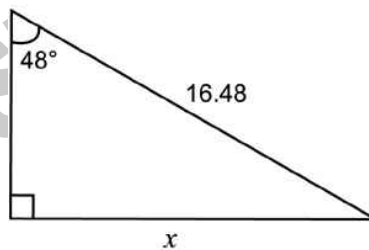
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45. The table shows the mean number of points scored per game by four professional basketball players in four seasons. Which player had the greatest range of mean points per game for the seasons shown in the table?

MEAN POINTS SCORED PER GAME				
Player	Season			
	1998-1999	1999-2000	2000-2001	2001-2002
Alonzo Mourning	20.1	19.2	19.8	23.2
Tim Hardaway	17.4	18.9	20.3	17.2
Jamal Mashburn	14.8	15.1	13.4	10.6
Terry Mills	9.0	14.2	10.8	9.4

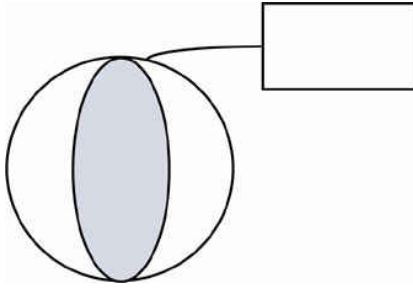
- Alonzo Mourning
- Tim Hardaway
- Jamal Mashburn
- Terry Mills

46. The value of x shown in the triangle, correct to two decimal places, is:



- 12.25
- 11.03
- 18.30
- 22.18
- 13.24

47. James manufactures his own Hacky Saks for sale. Each one costs him \$15. He wants to make \$5 profit on each Hacky Sak, and he has to add GST of 12.5%.



What price should be written on the price tag?

48. Which of the following represents a correct procedure for solving each given equation?

$-2(x-5) = -12$
 $-2x - 10 = -12$
 $-2x = -2$
 $x = 1$

$8(x-5) = 24$
 $8x - 40 = 24$
 $8x = -16$
 $x = -2$

$5 - 2x = 8x + 25$
 $5 = -10x + 25$
 $30 = 10x$
 $3 = x$

$7x - 12 = -2x + 15$
 $9x - 12 = 15$
 $9x = 27$
 $x = 3$

49. A linear relationship between x and y is shown in the table below. What is the value of a ?

x	-5	0	1	2	3
y	a	5	2	-1	-4

- $a = 20$
- $a = 3$
- $a = -3$
- $a = -10$

50. Simplify
 $3f - 2g - 6f + 9g$

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