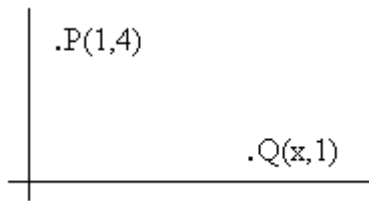# 第九套

1.

2. The slope of the line passing through P and Q is -3/5. What is the value of x?

3. A tree of height 50 feet casts a shadow 80 feet long at a certain time of day. A second tree near to the first casts a shadow 100 feet long at the same time. How many feet taller is the second tree than the first?

4. If $p^2 - q^2 = 12$, and $p + q = 4$

What is the value of p ?

5. $x + y = 15$, $y + z = 25$, and $x + z = 20$

What is the average (arithmetic mean) of x,y and z ?

6. A field covers 149.8 square yards. A farmer harvests the crop from the field in three days. The first day he covers 2/7 of the area. The next day has covers twice as much. How many square yards does he cover on the last day?

7. A faulty odometer (mileage indicator) on a car registers 6 miles for every 5 miles actually travelled. At the start of a journey it reads 500 miles and the end of the journey it reads 560 miles. What distance has actually been covered?

No. of students	Marks
10	80
5	75
5	70
2	60
2	55
1	20

8. This question and the next refer to the above table showing the distribution of marks obtained in a Math test by a certain class

What is the difference between the mode and the median of the set of scores shown in the table above?

9. Refer to the table from the previous question

Tina's score was accidentally omitted from the list. When her score is added, the average (arithmetic mean) score for the class does not change. What is Tina's score?

Leaf Number (n)	Difference (d) between SA and mean SA
1	+0.1
2	0
3	-0.2
4	-0.3
5	+0.1
6	+0.4
7	0
8	-0.3

10. The surface area (SA) of a series of leaves was measured in a particular experiment. For each value of SA, the value d was calculated, where d is the difference between the value and the mean SA. The results were expressed in tabulated form as shown above.

If S represents the sum of all the values of | d |, what is the value of S?

参考答案：

1.Correct Answer: 16

Explanation:

remember that dividing by a fraction is like multiplying by its inverse

1 x 3/1 + 2 x 6/2 + 3 x 7/3 = 3 + 6 + 7 = 16

2.Correct Answer: 6

Explanation:

If we imagine line segment PQ as the hypotenuse of a right triangle, we can see that the vertical distance between P and Q = 3 and the horizontal distance = 5 (Because the slope = difference in the y coordinates - difference in the x coordinates)

Since P is one unit to the right of the origin on the x-axis, Q must be 5 units to the right of that and so is at 6 units on the x-axis.

3.Correct Answer: 12.5

Explanation:

If you draw a diagram you will see there are two similar triangles involved.

The ratio of the trees will be equal to the ratio of their shadows

Let the height of the second tree = h; h/50 = 100/80; h = 50 x 100/80 = 62.5

The difference in their heights is 12.5

4.Correct Answer: 3.5

Explanation:

$p^2 - q^2 = (p - q) (p + q)$

12 = (p - q) (4)

p - q = 3; now add this to p + q = 4

2p = 7; p = 7/2

5.Correct Answer: 10

Explanation:

To get the average, add all three terms to get

2x + 2y + 2z = 60

So x + y + z = 30; and their average = 30/3 = 10

6.Correct Answer: 21.4

Explanation:

On the first day he harvests 2/7 of the area; on the second, twice as much (4/7); on the last day he harvests what◆s left = 1 - 6/7 = 1/7

1/7 of 149.8 = 21.4

7.Correct Answer: 50

Explanation:

The odometer indicates (incorrectly) that 60 miles have been covered. The actual distance covered will be 5/6 x 60 = 50 miles.

8.Correct Answer: 5

Explanation:

The mode is the value that occurs most often. There are 10 pupils who obtain 80 marks, making 80 the most common score, and the mode.

The median is the middle term in the ranked series of scores. Since there are 25 pupils, the middle term will be 13th in the series. The top ten scores are all of 80, and the 13th score will occur in the next group of

scores of 75. The median = 75.

The difference between mode and median = 80 - 75 = 5

9.Correct Answer: 71

Explanation:

If the average score does not change when Tina�s score is added, her score must be equal to the average score. The average = (80x10 + 5x75 + 5x70 + 2x60 + 2x55 + 1x20)/25

800 + 375 + 350 + 120 + 110 + 20 = 1055; 1775/25 = 71

10.Correct Answer: 1.4

Explanation:

We need to add the values of | d |. We need to remove all the minus signs because we need the absolute values of d. Hence, S = 0.1 + 0.2 + 0.3 + 0.1 + 0.4 + 0.3 = 1.4