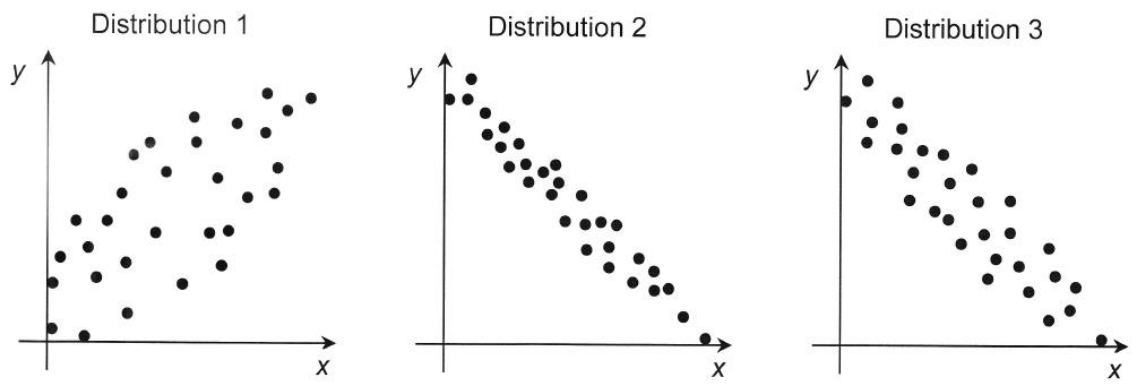


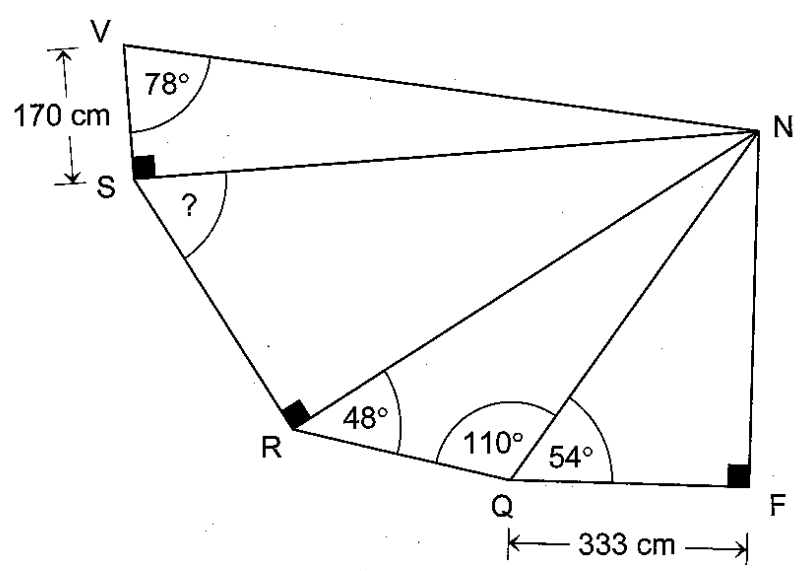
5. The following scatter plots represent three two-variable statistical distributions.



Which of the following presents these distributions, in order, from weakest to strongest linear correlation?

- A) 1, 2, 3
- B) 1, 3, 2
- C) 2, 1, 3
- D) 2, 3, 1

6. Consider triangles VSN, SRN, RQN and QFN represented below.

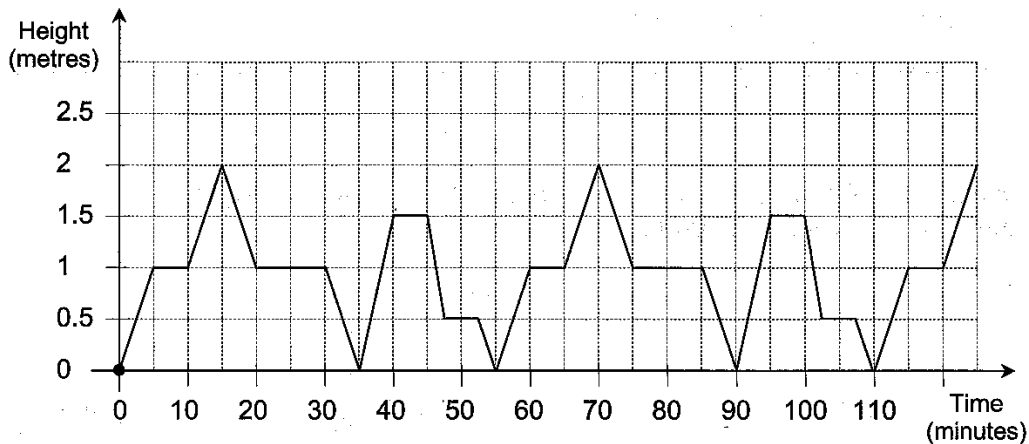
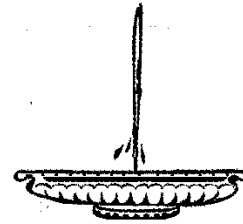


To the nearest tenth of a degree, what is the measure of angle NSR?

7. Water shoots out of the middle of a fountain.

The height of the jet of water varies.

The periodic function represented below can be used to determine the height of the jet of water in relation to the time elapsed from the moment the fountain was turned on.



What is the height of the jet of water exactly 270 minutes after the moment the fountain was turned on?

8. Clara, Jacob and Victor each have a wooden deck in their backyard. They hire the same contractor to either varnish or paint their decks.

The three decks are square, but of different sizes.

VARNISHING

Function f described below can be used to determine the cost of varnishing a square deck.

$$f(x) = 8.8x^2$$

where x : length of one of the sides of the deck, in metres

$f(x)$: cost of varnishing the deck, in dollars

PAINTING

Function g described below can be used to determine the cost of painting a square deck.

$$g(x) = ax^2$$

where x : length of one of the sides of the deck, in metres

$g(x)$: cost of painting the deck, in dollars

- ◆ The cost of varnishing Clara's deck is \$178.20.
- ◆ The cost of painting Clara's deck is \$283.50.
- ◆ The cost of painting Jacob's deck is \$143.36.
- ◆ Each side of Victor's deck measures 1.8 m more than each side of Jacob's deck.

What is the cost of varnishing Victor's deck?

9. Several years ago, a company moved its manufacturing plant from Town F to Town G. Since then, the population of Town F has decreased while the population of Town G has increased.

TOWN F

The population of Town F in relation to the time elapsed since the plant was moved is represented by function f described below.

$$f(x) = 20\,000(0.9)^x$$

where x : time elapsed since the plant was moved, in years

$f(x)$: population of Town F

Today, the population of Town F is 13 122.

Town G

The year the plant was moved, the population of Town G was the same as the population of Town F.

Every year since then, the population of Town G has increased by 15% in relation to the previous year.

To the nearest whole number, by how much did the population of Town G increase from the time the manufacturing plant was moved until today?