

18. During a sale, a customer can buy one shirt for  $x$  dollars. Each additional shirt the customer buys costs  $z$  dollars less than the first shirt. For example, the cost of the second shirt is  $x - z$  dollars. Which of the following represents the customer's cost, in dollars, for  $n$  shirts bought during this sale?

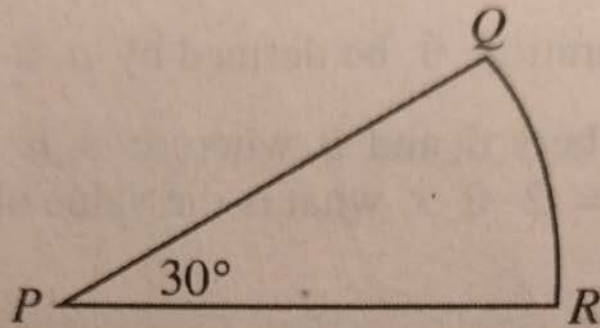
(A)  $x + (n - 1)(x - z)$

(B)  $x + n(x - z)$

(C)  $n(x - z)$

(D)  $\frac{x + (x - z)}{n}$

(E)  $(x - z) + \frac{(x - z)}{n}$



19. In the figure above,  $QR$  is the arc of a circle with center  $P$ . If the length of arc  $QR$  is  $6\pi$ , what is the area of sector  $PQR$ ?

- (A)  $108\pi$
- (B)  $72\pi$
- (C)  $54\pi$
- (D)  $36\pi$
- (E)  $9\pi$

20. There are 75 more women than men enrolled in Linden College. If there are  $n$  men enrolled, then, in terms of  $n$ , what percent of those enrolled are men?

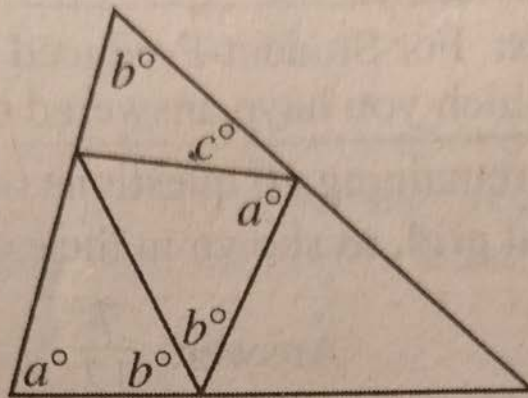
(A)  $\frac{n}{n+75}\%$

(B)  $\frac{n}{2n+75}\%$

(C)  $\frac{n}{100(2n+75)}\%$

(D)  $\frac{100n}{n+75}\%$

(E)  $\frac{100n}{2n+75}\%$



8. In the figure above, what is the value of  $c$  in terms of  $a$  and  $b$ ?

- (A)  $a + 3b - 180$
- (B)  $2a + 2b - 180$
- (C)  $180 - a - b$
- (D)  $360 - a - b$
- (E)  $360 - 2a - 3b$

16. Let the function  $h$  be defined by  $h(x) = 14 + \frac{x^2}{4}$ .


If  $h(2m) = 9m$ , what is one possible value of  $m$ ?

### INVENTORY OF CLOCKS AND FREQUENCY OF CHIMES

	Number of Clocks	Chimes $n$ Times on the $n$ th Hour	Chimes Once on the Hour	Chimes Once on the Half Hour
Type A	10	✓		✓
Type B	5	✓		
Type C	3		✓	✓

17. A merchant sells three types of clocks that chime as indicated by the check marks in the table above. What is the total number of chimes of the inventory of clocks in the 90-minute period from 7:15 to 8:45 ?



18. If the 5 cards shown above are placed in a row so that  is never at either end, how many different arrangements are possible?

16. If  $x$  is an integer greater than 1 and if  $y = x + \frac{1}{x}$ , which of the following must be true?

I.  $y \neq x$

II.  $y$  is an integer.

III.  $xy > x^2$

(A) I only

(B) III only

(C) I and II only

(D) I and III only

(E) I, II, and III