







22. A workforce consists of 6 women and 8 men. Suppose 4 workers are chosen at random. If all the workers have an equal chance of being picked, what is the probability that 2 men and 2 women will be selected?

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 $(C)\frac{32}{153}$  $(A) \frac{60}{143}$  $(B)\frac{48}{147}$  $(D)\frac{24}{153}$ (E) None of these

- 23. A triangle with area  $105\sqrt{3}$  has two sides of lengths equal to two consecutive natural numbers. If the angle between these sides is  $60^{\circ}$ , which of the following statements is correct? multille # # 3 PS mistime # #
  - (A) The length of the third side is greater than 41.

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- (B) The length of the third side is equal to  $\sqrt{421}$ .
- (C) The perimeter of the triangle is 462.
- (D) The length of the third side is smaller than 20.
- (E) None of these.

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24. Consider the family of parabolas f<sub>p</sub>(x) = x<sup>2</sup> + (p + 2)x + p, where 0 
(A) The vertices are interval.

频<sup>读 浅 彩。</sup>

- (A) The vertices are situated on the y-axis.
- (B) The vertices are situated on a slant line.
- (C) The vertices are not situated on a parabola.
- (D) The vertices are on the x-axis.
- (E) The vertices are in the third quadrant.

mistille the the 25. Compute the sum of the areas of all equilateral triangles in the figure, given that  $L = \sqrt[4]{3}$ 



	29. In With Jones' class, then average age of all the given $mx+ny$	rls is y, calculate the average mx-ny $(m+n)x-1$	e average age of all stuc e age of the boys. (m+n)x-ny	ents in the class is $x$ . If	the
finstitute	(A) $\frac{m+n}{m+n}$ (B)	m (C) $m+n$	$\frac{1}{2}$ (D) $\frac{(m+1)(m+1)}{m}$	(E) None of these	Institut
(%)	<ul><li>30. Suppose 101 persons array two persons, how m</li><li>(A) 101 (B) 99</li></ul>	rive at the reception of a cornany handshakes are possible (C) 202	ference. If there is exacted as a constraint of the ference of the	tly one handshake betw (E) 10100	reen
mstitute	31. In the mythical country N={1, 2, 3, 4, 10, 11, 12, Suppose $\frac{x}{3} = 2142$ and	of Jamais, the natural numb ,13, 14, 20, 21, 22, 23, 24, 3 y = 3123 + 2314. Use the	ers are defined by the fo 0, 31, 32, 33, 34, 40, } Jamaisian number syst	llowing sequence: em to compute the value	e of
R.	x + y. (A) 23023 (B) 32. Find the value of $(a + b)$ (A) 77 (B) 222	(C) 1344 (C) 135 (C)	3 (D) 23433 (d) 4 and $ab^2 = 18$ . (D) 40	E) 10442 (E) 5	ta stitut
R matthe	<ul> <li>33. Find the sum of all integ</li> <li>(A) 2</li> <li>(B) 17</li> <li>34. The area <i>A</i> of a rectangle</li> </ul>	gers <i>n</i> such that $\left \frac{2n-1}{3}\right  = 11$ (C) -1 (D) 1 (E) e is given by $A(x) = x^2 + 2$	5 - 16 3x - 90. Which of the	5 following could be the	R. Institute
R	expression of the perime (A) $2(x + 18)$ (B) 35. Suppose that $(-5) + (-(A)) = (-5) + (-(B)) = (-5) + (-(C)) = (-(C)$	eter of this rectangle if the side (2x + 13) (C) $4x + 26(-3) + (-1) + 1 + 2 + 3 + 4(C) 19$	de lengths and area mus (D) $8x + 54$ $4 + 5 + \dots + n = 181.1$ (D) 20 (I	t be integers? (E) None of these Find <i>n</i> . E) None of these	&
R.	<ul><li>36. An Olympic-sized swimplane 2, and 8 swimmers</li><li>(A) 64</li><li>(B) 96</li></ul>	nming pool consists of 10 lat in lane 3. If this pattern con (C) 784 (D	tinues, find the total number $(E) = 1$ (E) N	ers in lane 1, 4 swimme nber of swimmers in th one of these	rs in e pool.
R Mistitute	36. An Olympic-sized swim lane 2, and 8 swimmers (A) 64 (B) 96	nming pool consists of 10 lat in lane 3. If this pattern con (C) 784 (D	tinues, find the total number $2 \text{ swimmed}$ $2^{10} - 1$ (E) N	ers in lane 1, 4 swimme nber of swimmers in th one of these	rs in e pool.
K Matinte K Matinte	36. An Olympic-sized swim lane 2, and 8 swimmers (A) 64 (B) 96	aming pool consists of 10 lat in lane 3. If this pattern con (C) 784 (D)	thes. There are 2 swimm tinues, find the total num $2^{10} - 1$ (E) N	ers in lane 1, 4 swimme nber of swimmers in th one of these	rs in e pool.

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