

UB SAT 2009  
Worksheet #24  
Estimation Strategy

1. While playing darts, Larry hits the bull's-eye 15% of the time. How many darts would Larry need to throw in order to hit 6 bull's-eyes?

- (A) 34
- (B) 40
- (C) 42
- (D) 60
- (E) 90

2. Points  $A$ ,  $B$ , and  $C$  lie on a number line.  $A$  has coordinate  $-10$  and  $B$  has coordinate  $26$ . If point  $C$  is three-quarters of the way from  $A$  to  $B$ , what is the coordinate of point  $C$ ?

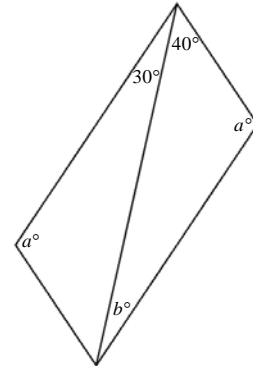
- (A)  $-1$
- (B)  $10$
- (C)  $\frac{26}{4}$
- (D)  $\frac{13}{2}$
- (E)  $17$

3. A circular pizza is sliced into 12 equal slices. Doug cuts each slice from the center to the edge in equal parts. If Doug eats 2 slices, what is the sum of the degree measure of the slices he eats?

- (A) 20
- (B) 60
- (C) 120
- (D) 220
- (E) 240

4. The number of cells in a certain lab experiment triples every hour. If there are 5 cells in the culture initially, then what is the number of cells in the culture after 4 hours?

- (A) 15
- (B) 20
- (C) 135
- (D) 405
- (E) 1,875

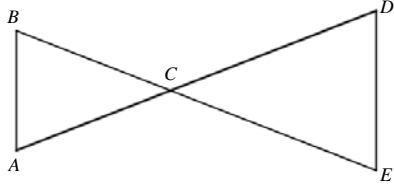


5. In parallelogram  $ABCD$  above, what is the value of  $2a + b$ ?

- (A) 120
- (B) 180
- (C) 240
- (D) 250
- (E) 320

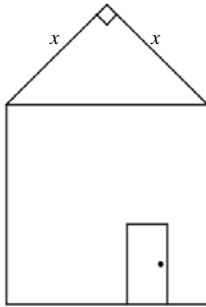
6. Carlos paid \$154.00 for two tickets to a concert. This price included a 25% handling fee for each ticket and a \$2 transaction fee for the total sale. What was the price for a single ticket before the additional fees?

- (A) \$95.00
- (B) \$60.80
- (C) \$57.50
- (D) \$57.00
- (E) \$38.00

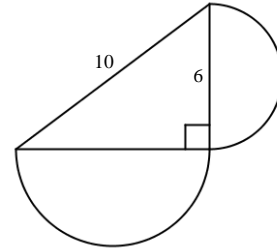


Note: Figure not drawn to scale.

7. In the figure above if  $AC = 2$ ,  $BC = 3$ ,  $DC = 4$ ,  $EC = 6$ ,  $AB = 4$ , and  $\overline{AB}$  is parallel to  $\overline{DE}$ , what is the sum of the perimeters of  $\triangle ABC$  and  $\triangle CDE$ ?
- (A) 27  
 (B) 25  
 (C) 20  
 (D) 18  
 (E) 15

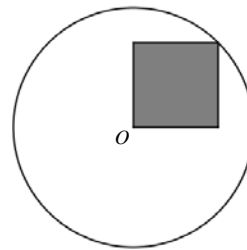


8. Jane is building a gingerbread house. The front face of the house is formed by a square and a right triangle, as shown in the figure above. If the height of the square is 10 inches, then what is the combined length, in inches, of the two sides of the triangle labeled  $x$ ?
- (A) 10  
 (B) 15  
 (C)  $\frac{10}{\sqrt{2}}$  (approximately 7.07)  
 (D)  $\frac{20}{\sqrt{2}}$  (approximately 14.14)  
 (E)  $\frac{30}{\sqrt{3}}$  (approximately 17.32)



9. The figure above is composed of two semi-circles and one triangle. What is the perimeter of the figure?
- (A)  $6\pi + 10$   
 (B)  $7\pi + 7$   
 (C)  $7\pi + 10$   
 (D)  $14\pi + 7$   
 (E)  $14\pi + 10$

10. In a square with vertices  $WXYZ$ , if point  $V$  is the midpoint of side  $YZ$  and the area of triangle  $XYV$  is  $\frac{4}{5}$ , what is the area of square  $WXYZ$ ?
- (A) 2  
 (B)  $\frac{8}{5}$   
 (C) 4  
 (D)  $\frac{16}{5}$   
 (E)  $\frac{18}{5}$



11. In the figure above, one vertex of the square is touching the center of the circle and a second vertex touches a point on the circle. If one side of the square is 2, what is the area of the unshaded region?
- (A)  $8\pi - 4$   
 (B)  $8\pi - 2$   
 (C)  $8\pi$   
 (D)  $9\pi$   
 (E)  $9\pi - 4$

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Answers

1. B

2. E

3. B

4. D

5. D

6. B

7. A

8. D

9. C

10. D

11. A