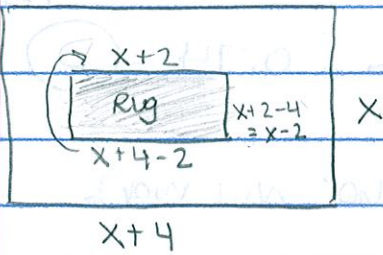


Round 12:

1. Denominator cannot be zero, has to be greater

(C)

2.



$$\text{Area floor} = x(x+4) = x^2 + 4x$$

$$\text{Area rug} = (x+2)(x-2) = x^2 - 4$$

$$A_{\text{Big}} - A_{\text{Little}} = (x^2 + 4x) - (x^2 - 4)$$

$$= x^2 + 4x - x^2 + 4$$

$$= 4x + 4$$

(D)

3.

	Chocolate	Vanilla	Total
Male	125	152	277
Female	183	80	263
Total	308	232	540

$$\frac{277}{540} + \frac{232}{540} - \frac{152}{540} = \frac{357}{540} = \frac{119}{180} \quad (B)$$

$$\frac{277}{540} + \frac{232}{540} - \frac{152}{540} = \frac{357}{540} = \frac{119}{180}$$

↑ Males ↑ Vanilla ↑ males who like vanilla ↑ Total ↑ Reduced

$$4. m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{1 - 4}{-2 - 4} = \frac{-3}{-6} = \frac{1}{2} \quad (D)$$

90° CC (y, x) Reflected y-axis (-x, y)

$$5. E(-5, 3) \rightarrow E'(-3, -5) \rightarrow E''(3, -5) \rightarrow \text{need to switch}$$

$$F(2, -2) \rightarrow F'(2, 2) \rightarrow F''(-2, 2) \rightarrow x \text{ and } y \text{ to}$$

$$G(3, 6) \rightarrow G'(-6, 3) \rightarrow G''(6, 3) \rightarrow \text{get back to original}$$

(D)

	Before 7	After 7	Total	Before 7	After 7	Total
Taxi	92(0.4)	8(0.4)	40	36.8	3.2	40
BUS	85(0.6)	15(0.6)	60	15.1	9	60
Total				207.8	12.2	100

$$P(\text{BUS} | \text{After } 7) = \frac{9}{12.2} = 0.74 = \textcircled{D}$$

7. $\frac{360^\circ}{60^\circ} = 6$ Rotation \rightarrow multiples of 60° will work
 (C)

8. Repeat # 3 \rightarrow (B)