

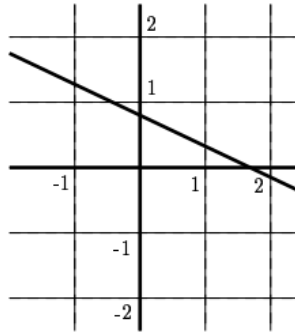
## UNIT 3 EXERCISES 1-5

## 2D GEOMETRY WORD PROBLEMS

- 2007B 1. Isabella's house has 3 bedrooms. Each bedroom is 12 feet long, 10 feet wide, and 8 feet high. Isabella must paint the walls of all the bedrooms. Doorways and windows, which will not be painted, occupy 60 square feet in each bedroom. How many square feet of walls must be painted?
- (A) 678      (B) 768      (C) 786      (D) 867      (E) 876
- 2018B 1. Kate bakes a 20-inch by 18-inch pan of cornbread. The cornbread is cut into pieces that measure 2 inches by 2 inches. How many pieces of cornbread does the pan contain?
- (A) 90      (B) 100      (C) 180      (D) 200      (E) 360
- 2014A 2. At the theater children get in for half price. The price for 5 adult tickets and 4 child tickets is \$24.50. How much would 8 adult tickets and 6 child tickets cost?
- (A) \$35      (B) \$38.50      (C) \$40      (D) \$42      (E) \$42.50

- 2005A 3. A rectangle with a diagonal of length  $x$  is twice as long as it is wide. What is the area of the rectangle?
- (A)  $\frac{1}{4}x^2$       (B)  $\frac{2}{5}x^2$       (C)  $\frac{1}{2}x^2$       (D)  $x^2$       (E)  $\frac{3}{2}x^2$
- 2018B 3. A line with slope 2 intersects a line with slope 6 at the point  $(40, 30)$ . What is the distance between the  $x$ -intercepts of these two lines?
- (A) 5      (B) 10      (C) 20      (D) 25      (E) 50
- 2003B 4. Moe uses a mower to cut his rectangular 90-foot by 150-foot lawn. The swath he cuts is 28 inches wide, but he overlaps each cut by 4 inches to make sure that no grass is missed. He walks at the rate of 5000 feet per hour while pushing the mower. Which of the following is closest to the number of hours it will take Moe to mow his lawn?
- (A) 0.75      (B) 0.8      (C) 1.35      (D) 1.5      (E) 3
- 2017A 4. Jerry and Silvia wanted to go from the southwest corner of a square field to the northeast corner. Jerry walked due east and then due north to reach the goal, but Silvia headed northeast and reached the goal walking in a straight line. Which of the following is closest to how much shorter Silvia's trip was, compared to Jerry's trip?
- (A) 30%      (B) 40%      (C) 50%      (D) 60%      (E) 70%
- 2018B 4. A circle has a chord of length 10, and the distance from the center of the circle to the chord is 5. What is the area of the circle?
- (A)  $25\pi$       (B)  $50\pi$       (C)  $75\pi$       (D)  $100\pi$       (E)  $125\pi$

2004A 5. The graph of a line  $y = mx + b$  is shown. Which of the following is true?



(A)  $mb < -1$

(B)  $-1 < mb < 0$

(C)  $mb = 0$

(D)  $0 < mb < 1$

(E)  $mb > 1$