52. CHALLENGE A computer programmer is creating a baseball player's strike zone for a video game, as shown. The strike zone is a rectangular region over home plate through which a ball must pass to be called a strike. In the animation, $\overline{AB}$ is the top of the strike zone and lies on a horizontal line that passes through the midpoint of $\overline{XY}$. The distance between grid lines represents 1 foot.
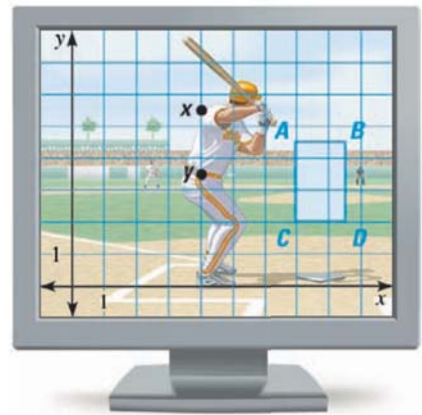
a. If the coordinates of X are (4, 5.5) and the coordinates of Y are (4, 3.5), what is the midpoint of $\overline{XY}$?

b. The coordinates of C are (7, 2) and the coordinates of D are (8.5, 2). Find the coordinates of point A and point B.

c. What is the area of the strike zone in the animation?

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53. ❤ **TAKS PRACTICE** How would the graph of $y = x^2 + 5$ be affected if it were changed to $y = x^2 + 3$? *TAKS Obj. 5*

  (A) The graph would shift 2 units to the left.

  (B) The graph would shift 2 units to the right.

  (C) The graph would shift 2 units up.

  (D) The graph would shift 2 units down.

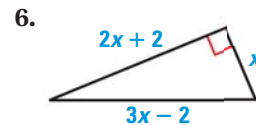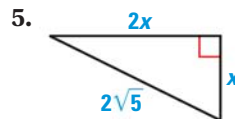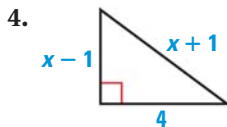---

QUIZ *for Lessons 11.4–11.5*

Let a and b represent the lengths of the legs of a right triangle, and let c represent the length of the hypotenuse. Find the unknown length. *(p. 737)*

  1. $a = 6$, $c = 10$ **2.** $b = 2$, $c = 6$ **3.** $a = 4$, $b = 7$

Find the unknown lengths. *(p. 737)*

4.

5.

6.

Find the distance between the two points. *(p. 744)*

  7. (7, 2), (7, 5)   **8.** (−1, −3), (4, −3)   **9.** (0, 0), (−6, 9)

Find the midpoint of the line segment with the given endpoints. *(p. 744)*

  10. (0, 5), (−6, 3)   **11.** (8, −1), (2, −7)   **12.** (−5, −3), (5, −3)

  13. (0, 6), (1.5, 4)   **14.** (2.5, −3), (0.5, 6)   **15.** $\left(-\frac{1}{4}, \frac{3}{4}\right), \left(\frac{1}{4}, \frac{5}{4}\right)$