

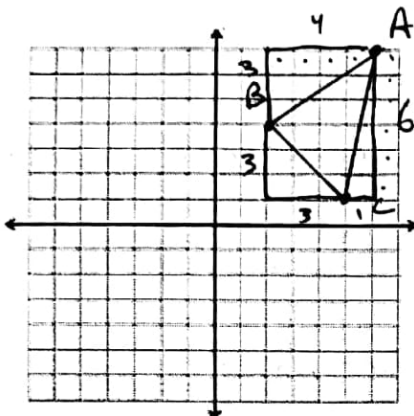
SECTION 6.2 (CONT'D)

$$\sqrt{1^2 + 6^2} = \sqrt{37}$$

$$\sqrt{3^2 + 3^2} = \sqrt{18}$$

$$\sqrt{3^2 + 4^2} = 5$$

①



FIND PERIMETER OF A ABC TO NEAREST 10th.
 $5 + \sqrt{37} + \sqrt{18} \approx 15.3$

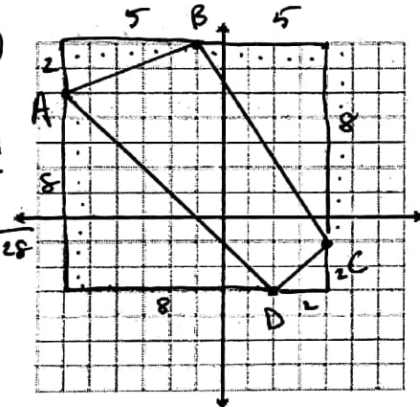
$$\sqrt{2^2 + 2^2} = \sqrt{8}$$

$$\sqrt{8^2 + 5^2} = \sqrt{89}$$

$$\sqrt{2^2 + 5^2} = \sqrt{29}$$

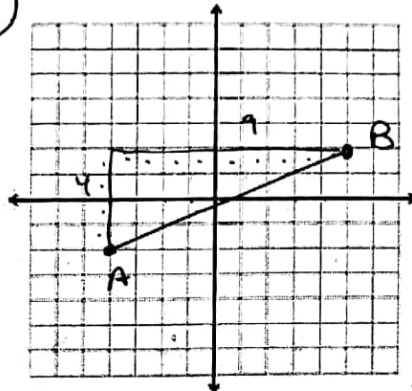
$$\sqrt{8^2 + 8^2} = \sqrt{128}$$

③



FIND THE PERIMETER OF POLYGON ABCD TO NEAREST 10th.
 $\sqrt{8} + \sqrt{89} + \sqrt{29} + \sqrt{128} \approx 28.9612 \Rightarrow 29.0$

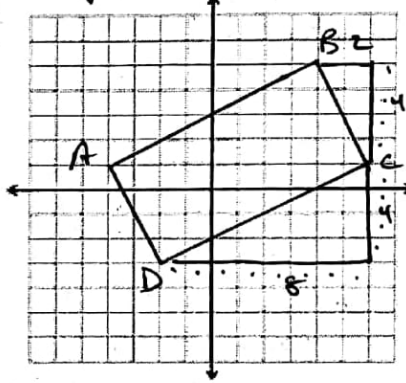
②



A(-4, -2)
B(5, 2)

- (A) FIND MIDPOINT OF \overline{AB}
 $(\frac{1}{2}, 0)$
- (B) FIND SLOPE OF $\overline{AB} = \frac{4}{9}$
- (C) FIND LENGTH OF \overline{AB} (10th)
 $\sqrt{4^2 + 9^2} = \sqrt{16 + 81} = \sqrt{97} \approx 9.8$

④



$$\sqrt{2^2 + 4^2} = \sqrt{4 + 16} = \sqrt{20}$$

$$\sqrt{4^2 + 8^2} = \sqrt{16 + 64} = \sqrt{80}$$

- (A) FIND THE PERIMETER OF RECTANGLE ABCD TO THE NEAREST 10th.
 $\sqrt{20} + \sqrt{20} + \sqrt{80} + \sqrt{80} \approx 26.8$
- (B) FIND THE AREA OF RECTANGLE ABCD TO THE NEAREST 10th.
 $A = \sqrt{20} \sqrt{80} = \sqrt{1600} = 40$

⑤ GIVEN A(-3, 2) AND B(4, -5), FIND THE LENGTH OF \overline{AB} TO THE NEAREST 10th.

$$d = \sqrt{(4 - (-3))^2 + (-5 - 2)^2}$$

$$= \sqrt{49 + 49} \approx 9.9$$

⑥ FIND THE MIDPOINT OF \overline{AB} IN PROBLEM ⑤.

$$\frac{-3 + 4}{2} = \frac{1}{2} \quad M\left(\frac{1}{2}, -\frac{3}{2}\right)$$

$$\frac{2 + (-5)}{2} = -\frac{3}{2}$$

①

Name: _____ Date: _____ Period: _____

Section 6.3
Consecutive Integer Word Problems

Consecutive Integers: INTEGERS THAT ARE "RIGHT NEXT TO" EACH OTHER

Example: (1 APART)

1, 2, 3, 4	10, 11, 12, 13	-10, -9, -8	x $x+1$ $x+2$
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Consecutive Even Integers: EVEN INTEGERS "RIGHT NEXT TO" EACH OTHER

Example: (2 APART)

2, 4, 6	-12, -10, -8	x $x+2$ $x+4$
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Consecutive Odd Integers: ODD INTEGERS "RIGHT NEXT TO" EACH OTHER

Example: (2 APART)

3, 5, 7	-13, -11, -9	x $x+2$ $x+4$
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Write an equation to represent the given relationship. Solve the equation and answer the question.

1. The sum of three consecutive integers is 39. Find the integers.

x	$x + (x+1) + (x+2) = 39$	12, 13, 14
$x+1$	$3x + 3 = 39$	
$x+2$	$3x = 36 \quad x = 12$	

2. The sum of three consecutive odd integers is 45. What are the integers?

x	$x + (x+2) + (x+4) = 45$	13, 15, 17
$x+2$	$3x + 6 = 45$	
$x+4$	$3x = 39 \quad x = 13$	

3. The sum of four consecutive even integers is -44. Find the integers.

x	$x + (x+2) + (x+4) + (x+6) = -44$	-14, -12, -10, -8
$x+2$	$4x + 12 = -44$	
$x+4$	$4x = -56 \quad x = -14$	
$x+6$		

4. The smaller of two consecutive even integers is five more than one half of the greater. Find the integers.

x	$x = 5 + \frac{1}{2}(x+2)$	12, 14
$x+2$	$x = 5 + \frac{1}{2}x + 1$	
	$x = 6 + \frac{1}{2}x$	
	$2x = 12 + x$	
	$x = 12$	

Write an equation to represent the given relationship. Solve the equation and answer the question.

5. The sum of three consecutive even integers is 72. What are the integers?

$$\begin{array}{l} x \\ x+2 \\ x+4 \end{array} \quad \begin{array}{l} x + (x+2) + (x+4) = 72 \\ 3x + 6 = 72 \\ 3x = 66 \quad x = 22 \end{array} \quad (22, 24, 26)$$

6. The sum of four consecutive integers is 90. Find the integers.

$$\begin{array}{l} x \\ x+1 \\ x+2 \\ x+3 \end{array} \quad \begin{array}{l} x + (x+1) + (x+2) + (x+3) = 90 \\ 4x + 6 = 90 \\ 4x = 84 \quad x = 21 \end{array} \quad (21, 22, 23, 24)$$

7. The sum of three consecutive integers is -51. What are the integers?

$$\begin{array}{l} x \\ x+1 \\ x+2 \end{array} \quad \begin{array}{l} x + (x+1) + (x+2) = -51 \\ 3x + 3 = -51 \\ 3x = -54 \quad x = -18 \end{array} \quad (-18, -17, -16)$$

8. The sum of three consecutive even integers is 30 more than the largest. What are the integers?

$$\begin{array}{l} x \\ x+2 \\ x+4 \end{array} \quad \begin{array}{l} x + (x+2) + (x+4) = 30 + (x+4) \\ 3x + 6 = 34 + x \\ 2x = 28 \quad x = 14 \end{array} \quad (14, 16, 18)$$

9. The greater of two consecutive odd integers is one less than twice the smaller. Find the integers.

$$\begin{array}{l} x \\ x+2 \end{array} \quad \begin{array}{l} x+2 = 2x-1 \\ x = 3 \end{array} \quad (3, 5)$$

10. The largest of three consecutive even integers is three times the smallest. Find the integers.

$$\begin{array}{l} x \\ x+2 \\ x+4 \end{array} \quad \begin{array}{l} x+4 = 3x \\ 4 = 2x \\ x = 2 \end{array} \quad (2, 4, 6)$$

Write an equation to represent the given relationship. Solve the equation.

11. The product of two consecutive integers is 42.

$$\begin{array}{l} x \\ x+1 \end{array} \quad \begin{array}{l} x(x+1) = 42 \\ x^2 + x = 42 \\ x^2 + x - 42 = 0 \end{array} \quad \begin{array}{l} (x+7)(x-6) = 0 \\ x = -7 \quad | \quad x = 6 \end{array} \quad \begin{array}{l} -7, -6 \\ 0, 2 \\ 6, 7 \end{array}$$

12. The product of two consecutive integers is 30.

$$\begin{array}{l} x \\ x+1 \end{array} \quad \begin{array}{l} x(x+1) = 30 \\ x^2 + x - 30 = 0 \\ (x+6)(x-5) = 0 \\ x = -6 \quad x = 5 \end{array} \quad (5, 6 \text{ or } -6, -5)$$

13. The product of two consecutive even integers is 80.

$$\begin{array}{l} x \\ x+2 \end{array}$$

$$\begin{aligned} x(x+2) &= 80 \\ x^2 + 2x &= 80 \\ x^2 + 2x - 80 &= 0 \end{aligned}$$

$$(x+10)(x-8) = 0$$
$$x = -10 \quad | \quad x = 8$$

$$\begin{array}{c} 8, 10 \\ \text{or} \\ -10, -8 \end{array}$$

14. The product of two consecutive integers is 72.

$$\begin{aligned} x(x+1) &= 72 \\ x^2 + x - 72 &= 0 \\ (x+9)(x-8) &= 0 \\ x = -9 \quad & x = 8 \end{aligned}$$

$$\begin{array}{c} 8, 9 \\ \text{or} \\ -9, -8 \end{array}$$

15. The product of two consecutive odd integers is 195.

$$\begin{aligned} x(x+2) &= 195 \\ x^2 + 2x - 195 &= 0 \end{aligned}$$

$$(x+15)(x-13) = 0$$
$$x = -15 \quad | \quad x = 13$$

$$\begin{array}{c} -15, -13 \\ \text{or} \\ 13, 15 \end{array}$$

16. The product of two consecutive integers is 132.

$$\begin{aligned} x(x+1) &= 132 \\ x^2 + x - 132 &= 0 \\ (x+12)(x-11) &= 0 \\ x = -12 \quad & x = 11 \end{aligned}$$

$$\begin{array}{c} 11, 12 \\ \text{or} \\ -12, -11 \end{array}$$