8 Algebra CC

Essential Questions: What are consecutive integers? How do we solve consecutive integer problems?

Do Now:

a) Name the next 3 consecutive integers after 7. 8, 9, 10

b) Name the next 3 consecutive integers after -4. -3, -2, -1

c) Name the next 3 consecutive ***odd*** integers after 3. 5, 7, 9

d) Name the next 3 consecutive ***odd*** integers after -5. -3, -1, 1

e) Name the next 3 consecutive ***even*** integers after 6. 8, 10, 12

f) Name the next 3 consecutive ***even*** integers after -8. -6, -4, -2

g) If n is an integer, write the next 3 consecutive integers after n.

$n+1$ $n+2$ $n+3$

h) If $n + 5$ is an integer, write the next 3 consecutive integers after $n + 5$.

$n+6$ $n+7$ $n+8$

i) If n is an even integer, write the next 3 consecutive even integers after n.

$n+2$ $n+4$ $n+6$

j) If n is an odd integer, write the next 3 consecutive odd integers after n.

$n+2$ $n+4$ $n+6$

k) If $2n - 3$ is an odd integer, write the next 3 consecutive odd integers after $2n - 3$.

$2n-1$ $2n+1$ $2n+3$

Stop Here

1) Find two consecutive integers such that their sum is 89.

x: 1st integer = 44

$x+1$: 2nd consecutive integer = 45

$$x + x + 1 = 89$$

$$2x + 1 = 89$$

$$2x = 88$$

$$x = 44$$

two consecutive integers 44, 45

2) Find two consecutive odd integers that have a sum of 68.

x: 1st odd integer = 33

$x+2$: 2nd consecutive odd integer = 35

$$x + x + 2 = 68$$

$$2x + 2 = 68$$

$$2x = 66$$

$$x = 33$$

3) Find three consecutive odd integers such that the sum of the first and third equals the sum of the second and 43.

x: 1st odd integer = 41

$x+2$: 2nd consecutive odd integer = 43

$x+4$: 3rd consecutive odd integer = 45

sum of 1st and 3rd = second and 43

$$x + x + 4 = x + 2 + 43$$

$$2x + 4 = x + 45$$

$$x + 4 = 45$$

$$x = 41$$

4) Find three consecutive integers such that the sum of twice the second and three times the third is five less than six times the first.

x: 1st integer = 13

$(x+1)$ 2nd consecutive integer = 14

$(x+2)$: 3rd consecutive integer = 15

sum of twice the second and 3 times the third = 6 times the first minus 5

$$2(x+1) + 3(x+2) = 6(x) - 5$$

$$2x + 2 + 3x + 6 = 6x - 5$$

$$5x + 8 = 6x - 5$$

$$8 = x - 5$$

$$13 = x$$