

Adding and Subtracting Integers (Show Your Work!)

1. Simplify

- a) $(+4) - (+6)$ b) $(+6) - (-11)$ c) $(-7) - (+12)$ d) $0 - (-5)$ e) $(+8) + (-11)$ f) $0 - (+3)$

2. Simplify

- a) $(+45) - (-15)$ b) $(-23) - (-13)$ c) $(-14) - (+66)$ d) $(-145) - (-35)$ e) $(+68) + (-98)$

- f) $(-72) - (-42)$ g) $(-15) + (-75)$ h) $(-187) - (-42)$ i) $(-27) - (+43)$ j) $(+24) + (-24)$

3. Simplify

- a) $(-9) + (-7) - (-5) + (-2) - (-8)$ b) $(+8) + (+4) - (+6) - (-3) + (-11)$ c) $(-6) - (-3) - (-7) + (-8)$

- d) $0 - (+10) - (-9) + (-11) + (+4)$ e) $(-6) + (-7) - (+5) - (-11) - (+3)$ f) $(-1) - (-1) + (-1) - (+1)$

- g) $(+16) + (-12) - (+18) - (-22)$ h) $9 - (-13) - 7 + (-21) + 5 - (-8) - 12$

4. Simplify

- a) $5 - 2 + 7 - 8 + 4 - 9 - 6$ b) $-9 - 5 + 8 - 4 + 0 - 2 - 3 + 11$ c) $0 - 11 - 16 + 10 + 4 - 8 - 7$

- d) $17 - 14 - 2 + 13 - 9 - 10$ e) $7 - 12 - 6 + 4 - 8 + 2 - 5 - 4$ f) $-3 - 9 + 1 - 5 + 7 - 4$

5. Simplify

- a) $(-3 + 7) + (6 - 4 + 10)$ b) $(9 - 6 + 13) - (-4 + 5 - 11)$ c) $(13 - 10 + 1) - (-2 - 8 + 1)$

6. The lowest temperature ever recorded in Canada was -63°C and the highest was 45°C . What is the difference between these temperatures?

7. The greatest temperature change in North America in a day was from 7°C to -49°C in Montana. What was the temperature change?

8. An elevator is on the 14th floor. It goes down 6 floors, then down 3 more floors, then up 2 floors and finally down 4 floors. What floor is it now at?

9. Write out an integer expression for the following and work out the answer.

- a) A football team is on the 15 yard line, it gains 12 yards, then is penalized 5 and gains 8 more
b) I have \$120 in my account, I deposit \$65, write cheques for \$28 and \$17, deposit \$43 and lose \$7 in service charges.

10. Normal Body Temperatures and Survival Temperature Ranges

Animal	Normal Temp.	Minimum Temp.	Maximum Temp.
Garter Snake	22	4	39
Crocodile	26	23	29
Lizard	35	25	45

- a) Which animal survived the greatest temperature range and by how much?
b) Which animal survived the smallest temperature range and by how much?
c) How much can a Lizard's normal temp. decrease before reaching its minimum?

Multiplying and Dividing Integers

Simplify

1. a) $(-5)(+6)$ b) $(+7)(-8)$ c) $(-7)(-9)$ d) $(-12)(+5)$ e) $(-3)(-13)$ f) $(0)(-7)$
g) $(9)(-7)$ h) $(-9)(0)$ i) $(+9)(+3)$ j) $(+7)(-6)$ k) $(-5)(-10)$ l) $(12)(-7)$

2. a) $(-2)(+5)(-7)$ b) $(-3)(-4)(-2)$ c) $(+6)(-5)(+4)$ d) $(-1)(+3)(-3)$
e) $(+2)(-3)(-3)$ f) $(+5)(-1)(-1)(-1)$ g) $(-1)(-2)(-3)(-4)$ h) $(-5)(+4)(+3)(-2)$

3. a) $(-2)(+3) + (-6)(-2)$ b) $(-4)(-3) + (-1)(-2)$ c) $(-2)(-6) - (+5)(-2)$
d) $(-3)(+7) - (+1)(+5)$ e) $(-2)(+8) - (-3)(-3)$ f) $(+4)(-7) + (-8)(+6)$
g) $(-3)(+9) + (-2)(+7)$ h) $(-7)(-9) - (-6)(-7)$ i) $(-5)(-2)(-2) - 2(-1)(-1)$

4. a) $(-48) + (+4)$ b) $(-36) + (-9)$ c) $(+32) + (-8)$ d) $(-18) + (+3)$
e) $(-100) + (-5)$ f) $(+25) + (+5)$ g) $(-36) + (+4) + (-3)$ h) $(-48) + 12 \times (-5)$

5. a) $\frac{-36}{4}$ b) $\frac{46}{-2}$ c) $\frac{-18}{-2}$ d) $\frac{-121}{11}$ e) $\frac{-81}{-9}$ f) $-\left(\frac{-15}{-3}\right)$ g) $-\left(\frac{24}{-6}\right)$

6. a) $\frac{(-4)(10)}{-8}$ b) $\frac{6(-15)}{-5}$ c) $\frac{(-10)(12)}{(5)(-3)}$ d) $\frac{(-15)(-20)}{(-10)(3)}$ e) $\frac{(-50)(9)}{(15)(6)}$

- f) $\frac{(14)(-16)}{(-8)(-7)}$ g) $\frac{(-5)(9)(-24)}{(-3)(4)}$ h) $\frac{(-6)(-8)}{(-2)(-1)(-3)}$ i) $\frac{(-30)}{5} + \frac{15}{(-3)}$

- j) $\frac{-20}{10} + \frac{8}{(-2)}$ k) $\frac{(-9)}{(-3)} - \frac{12}{4}$ l) $\frac{14}{(-2)} - \frac{(-16)}{8}$ m) $\frac{(-36)}{4} + \frac{(-56)}{-8}$

- n) $\frac{(-42)}{7} - \frac{54}{(-6)} + \frac{(-63)}{(-7)} - \frac{(-56)}{(-8)} + \frac{(-81)}{9}$

7. The debits and credits of 9 people in the borrowers and lenders club are as follows:

-14 +12 -5 -9 +18 +3 -11 -5 +2

- a) If the 9 people were to combine their debits and credits what would be their total?

- b) What is the mean (average) debit or credit per person?

- c) What is the median (middle) debit or credit per person?

- d) What is the modal debit or credit per person?

8. The temperature is falling at a rate of $3^{\circ}\text{C}/\text{hr}$. How long will it take to fall from:

- a) 4°C to -11°C b) -2°C to -23°C

3) a) -5 b) -2 c) -4 d) -8
e) -10 f) -2 g) 8 h) -5
4) a) -9 b) -4 c) -28
d) -5 e) -22 f) -13
5) a) 16 b) 26 c) 13
d) 108°C e) down 56°C
6) a) 3rd floor
7) a) 30 yard b) 1/4

Some Answers
3) a) 6 b) 14 c) 22 d) -26 e) -5
f) -76 g) -41 h) 21 i) -22
6) a) 5 b) 18 c) 8 d) -10 e) -5 f) -4 g) -90
h) -8 i) -11 j) -6 k) 0 l) -5 m) -2 n) -4
7) a) -9 b) -1 c) -5 d) -5
8) a) 5 hr b) 7 hr