

Long /
Persinger
7th grade

NTI DAY #2
(weather-closed school day)

PACKET
TWO
(Math)

7

General Directions:

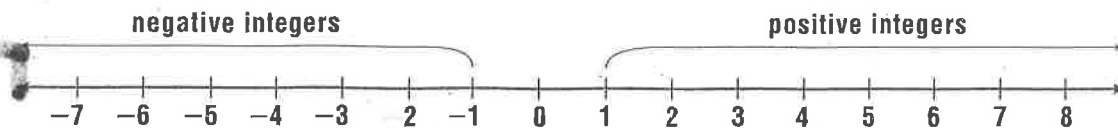
Due to weather, Harrison County Schools are closed. In an effort to utilize this day on the school calendar, your child is assigned and should work on this "packet" of school work today. It will count as a grade for this subject. The work attached is specific to the subject listed above. Please contact your child's teacher of this subject at 234-7110 in the event you/your student have questions on this packet. Staff and teachers reported to HCMS today and are available should you have questions.



Study Guide

Integers

Integers greater than 0 are **positive integers**. Integers less than 0 are **negative integers**.



Two numbers are **opposites** if, on the number line, they are the same distance from 0, but on opposite sides of 0. The number line below shows that -5 and 5 are opposites.



The **absolute value** of an integer is its distance from 0 on the number line.

5 is 5 units from 0. The absolute value of 5 is 5. $|5| = 5$

-5 is 5 units from 0. The absolute value of -5 is 5. $|-5| = 5$

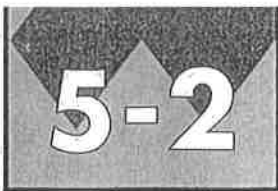
Write an integer for each situation.

- 6°F below zero
- a gain of 40 pounds
- a profit of \$4
- a loss of 10 points
- 68°F above zero
- falling 3 feet

Write the integer represented by the point for each letter. Then find its opposite and its absolute value.



- Q
- R
- S
- T
- V
- W
- X
- Z
- Y



Study Guide

Comparing and Ordering Integers

To compare or order integers, think of a number line. The number farther to the right on the number line is greater.



Since 2 is to the right of -3 on the number line, $-3 < 2$.

Examples 1 Replace each \bigcirc with $<$ or $>$ to make a true sentence.

$-3 \bigcirc 3$ Since a negative integer is always less than a positive integer, $-3 < 3$.

$-2 \bigcirc -5$ Since -2 is to the right of the -5 on the number line, $-2 > -5$.

2 Order the integers 0, 3, -1 , -3 , and 5 from least to greatest.

-3 is farthest to the left on the number line, so it is least.

Order the integers from left to right.

$-3, -1, 0, 3, 5$

Replace each \bigcirc with $<$ or $>$ to make a true sentence.

1. $-5 \bigcirc 7$

2. $0 \bigcirc -2$

3. $-8 \bigcirc 8$

4. $1 \bigcirc -4$

5. $17 \bigcirc 25$

6. $-12 \bigcirc -10$

Order the integers from least to greatest.

7. 12, -4 , 31, 0, -50 , -12

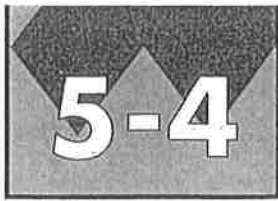
8. 9, -7 , 1, -5 , 23, -11

9. -45 , 62, -64 , 45, -12 , 17

10. -2 , -14 , -8 , -19 , -24 , -1

11. -6 , 5, 1, -8 , 0, -7

12. -101 , -102 , -103 , 101, 102, 103



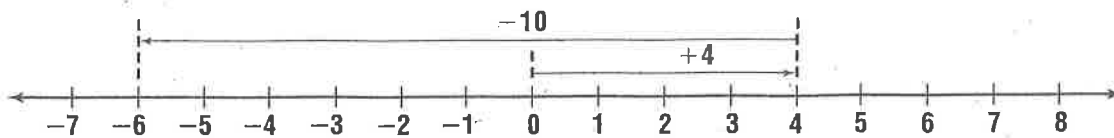
Study Guide

Adding Integers

To add integers, think of a number line. Locate the first addend on the number line. Move right if the second addend is positive. Move left if the second addend is negative.

Example 1 Solve $t = 4 + (-10)$.

Start at 0. Since 4 is positive, go 4 units to the right.
Since -10 is negative, go 10 units to the left.



So, $t = -6$.

When you add integers, remember the following.

The sum of two positive integers is positive.

The sum of two negative integers is negative.

The sum of a positive integer and a negative integer is:

- positive if the positive integer has the greater absolute value.
- negative if the negative integer has the greater absolute value.

Examples 2 Solve $n = 14 + (-11)$.

$|14| > |-11|$,
so the sum is positive.
 $14 - 11 = 3$
So, $n = 3$.

3 Solve $-24 + 16 = k$.

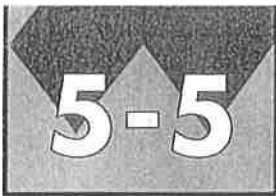
$|-24| > |16|$;
so the sum is negative.
 $24 - 16 = 8$
So, $k = -8$.

Solve each equation.

- | | | |
|----------------------|----------------------|----------------------|
| 1. $p = 16 + (-11)$ | 2. $-22 + (-7) = g$ | 3. $y = -6 + 36$ |
| 4. $-50 + 50 = v$ | 5. $c = -10 + (-10)$ | 6. $k = 12 + 9$ |
| 7. $100 + (-25) = w$ | 8. $n = 38 + (-6)$ | 9. $-50 + (-20) = v$ |
| 10. $r = -89 + 29$ | 11. $85 + (-10) = t$ | 12. $4 + (-10) = z$ |

Evaluate each expression if $a = 8$, $b = -8$, and $c = 4$.

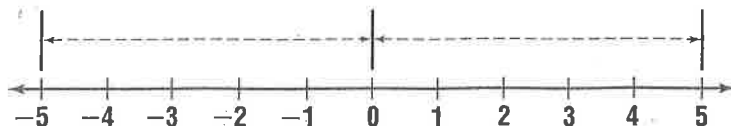
- | | | |
|---------------|-----------------|--------------|
| 13. $a + 16$ | 14. $b + (-9)$ | 15. $b + c$ |
| 16. $-10 + c$ | 17. $a + (-21)$ | 18. $12 + b$ |



Study Guide

Subtracting Integers

An integer and its **opposite** are the same distance from 0 on a number line.
The integers 5 and -5 are opposites.



The sum of an integer and its opposite is 0.

$$-5 + 5 = 0$$

To subtract an integer, add its opposite.

Examples 1 Solve $t = 6 - 9$.

$$t = 6 + (-9) \quad \text{To subtract 9, add } -9.$$

$$t = -3$$

2 Solve $m = -10 - (-12)$.

$$m = -10 + 12 \quad \text{To subtract } -12, \text{ add } 12.$$

$$m = 2$$

Solve each equation.

1. $b = 8 - 11$

2. $18 - (-5) = p$

3. $-10 - 4 = h$

4. $n = -8 - (-6)$

5. $v = -15 - 40$

6. $x = 25 - (-13)$

7. $51 - (-26) = k$

8. $-30 - (-52) = a$

9. $95 - 101 = m$

10. $j = -75 - 50$

11. $r = 5 - 55$

12. $19 - (-10) = y$

Evaluate each expression if $m = -1$, $n = 10$, and $p = 6$.

13. $m - 8$

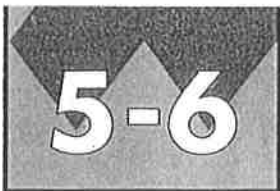
14. $10 - m$

15. $-n - p$

16. $n - m$

17. $p - (-m)$

18. $-25 - p$



Study Guide

Multiplying Integers

The product of two positive integers is positive.

Examples Solve $m = 5(8)$.
 $m = 40$

Solve $n = 4(5)(6)$.
 $n = 20(6)$
 $n = 120$

Solve $p = (2)(8)(1)$.
 $p = 16(1)$
 $p = 16$

The product of two negative integers is positive.

Examples Solve $y = (-6)(-9)$.
 $y = 54$

Solve $x = (-7)^2$.
 $x = (-7)(-7)$
 $x = 49$

Solve $z = (-3)(-5)(2)$.
 $z = 15(2)$
 $z = 30$

The product of a positive integer and a negative integer is negative.

Examples Solve $d = (-4)(7)$.
 $d = -28$

Solve $e = (10)(-5)(3)$.
 $e = -50(3)$
 $e = -150$

Solve $f = (-9)(2)^2$.
 $f = (-9)(4)$
 $f = -36$

Solve each equation.

1. $-7(-8) = p$

2. $10(-6) = j$

3. $a = -9(3)$

4. $(-8)^2 = k$

5. $m = (-12)(-12)$

6. $20(-20) = v$

7. $t = (-25)(4)$

8. $15(30) = c$

9. $h = 2(-2)(2)$

Evaluate each expression if $x = -3$, $y = -10$, $a = 2$, and $b = 6$.

10. $-8a$

11. $9x$

12. xy

13. ab

14. $3xa$

15. $-10by$

16. $-abx$

17. x^2

18. $25y$



Study Guide

Dividing Integers

If two integers have the same sign, their quotient is positive.

Examples 1 Solve $k = 560 \div 8$. *The signs are the same.*
 $k = 70$ *The quotient is positive.*

2 Solve $h = -120 \div (-6)$. *The signs are the same.*
 $h = 20$ *The quotient is positive.*

If two integers have different signs, their quotient is negative.

Examples 3 Solve $a = -75 \div 5$. *The dividend is negative.*
 $a = -15$ *The divisor is positive.*
The quotient is negative.

4 Solve $b = 99 \div (-33)$. *The dividend is positive.*
 $b = -3$ *The divisor is negative.*
The quotient is negative.

Solve each equation.

1. $y = 64 \div (-8)$

2. $-100 \div 4 = c$

3. $f = -250 \div (-5)$

4. $60 \div (-12) = x$

5. $-90 \div (-10) = u$

6. $-88 \div 4 = k$

7. $375 \div (-25) = g$

8. $t = -960 \div (-3)$

9. $r = 700 \div 35$

Evaluate each expression if $r = -96$, $t = -8$, and $v = 2$.

10. $\frac{r}{t}$

11. $\frac{t}{v}$

12. $\frac{-4r}{t}$

13. $\frac{t^2}{v}$

14. $\frac{728}{t}$

15. $\frac{tv}{4}$

16. $\frac{r}{-48}$

17. $\frac{4t}{v}$

18. $\frac{r}{tv}$