

Adding Integers

Hints/Guide:

3/3

Rules for Adding Integers:

1. Adding positive numbers – add the numbers and the answer is positive.
2. Adding negative numbers – add the numbers and the answer is negative.
3. Adding a positive and a negative number – **subtract** the numbers, then
 - if the greater number is positive, the answer is positive
 - if the greater number is negative, the answer is negative.

Examples:

1) $3 + 5 = 8$

two positive numbers: add the numbers and the answer is positive

2) $-12 + (-7) = -19$

two negative numbers: add the numbers and the answer is negative

3) $-36 + 21 = -15$

a negative and a positive: subtract the numbers and keep the sign of the greater number

**use dry erase number line/no*
 Exercises: Follow the rules for adding integers to solve the problems. *calc.*

1. $-9 + 2$

2. $2 + (-5)$

3. $-10 + 6$

4. $8 + (-3)$

5. $-8 + 8$

6. $6 + (-6)$

7. $-3 + (-5)$

8. $-4 + (-6)$

9. $17 + (-17)$

10. $-15 + 15$

11. ~~$-17 + (-25)$~~

12. ~~$24 + (-17)$~~

13. $8 + (-5)$

14. $-7 + 8$

15. $-4 + (-5)$

#1

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Subtracting Integers

Hints/Guide:

Rules for Subtracting Integers:

1. Change the subtraction to addition.
2. Change the sign of the number after the subtraction sign to the opposite:
 - if it is a positive number, make it negative
 - if it is a negative number, make it positive
3. Then follow the rules for addition.

Examples:

1) $2 - 6 = 2 + (-6) = -4$

change the subtraction to addition, and 6 to (-6)

follow the rules for addition

2) $4 - (-9) = 4 + 9 = 13$

change the subtraction to addition and (-9) to 9.

follow the rules for addition

3) $-7 - (-10) = -7 + 10 = 3$

change the subtraction to addition and (-7) to 7

follow the rules for addition

* use dry erase number line, no calc

Exercises: Follow the rules for subtracting integers to solve the problems.

1. $3 - 7$

$3 - 7 = 3 + (-7) = -4$

2. $4 - 9$

3. $0 - 7$

4. $0 - 10$

5. $-8 - (-2)$

$-8 - (-2) = -6$

6. $-6 - (-8)$

7. $-10 - (-10)$

8. $-6 - (-6)$

9. $12 - 16$

10. $14 - 19$

11. $20 - 27$

~~12. $30 - 4$~~

13. $-9 - (-3)$

14. $-7 - (-9)$

15. $8 - (-3)$

Algebra Prep/IM

Multiplying Integers

Hints/Guide:

Rules for Multiplying Integers:

- a positive number times a positive number equals a positive number
positive • positive = positive
- a negative number times a negative number equals a positive number
negative • negative = positive
- a positive number times a negative number equals a negative number
positive • negative = negative
negative • positive = negative

Examples:

- 1) $3 \cdot 6 = 18$ positive times a positive equals a positive
- 2) $-3 \cdot (-6) = 18$ negative times a negative equals a positive
- 3) $3 \cdot (-6) = -18$ positive times a negative equals a negative
- 4) $-3 \cdot 6 = -18$ negative times a positive equals a negative

Exercises: Follow the rules for multiplying integers to solve the problems.

1. $-8 \cdot 2$

2. $-2 \cdot 5$

3. $-7 \cdot 6$

4. $-9 \cdot 2$

5. $8 \cdot (-3)$

6. $9 \cdot (-5)$

7. $-9 \cdot 8$

8. $-10 \cdot 3$

9. $-8 \cdot (-2)$

10. $-2 \cdot (-5)$

11. $-7 \cdot (-6)$

12. $-9 \cdot (-2)$

13. $15 \cdot (-8)$

14. $-12 \cdot (-10)$

15. $-14 \cdot 17$

Dividing Integers

Hints/Guide:

Rules for Dividing Integers (same as multiply):

- a positive number divided by a positive number equals a positive number
positive divided by positive = positive
- a negative number divided by a negative number equals a positive number
negative divided by negative = positive
- a positive number divided by a negative number equals a negative number
positive divided by negative = negative
negative divided by positive = negative

Examples: (fraction bar (/) means divide)

1) $6 / -3 = -2$ positive divided by a negative equals a negative

2) $-15 / -3 = 5$ negative divided by a negative equals a positive

3) $-24 / 8 = -3$ negative divided by positive equals a negative

Exercises: Follow the rules for dividing integers to solve the problems.

1. $36 / (-6)$

2. $28 / (-7)$

3. $26 / -2$

4. $26 / (-13)$

5. $-16 / 8$

6. $-22 / (-2)$

7. $-48 / (-12)$

8. $-63 / (-9)$

9. $-72 / 9$

10. $-50 / 25$

11. $-100 / (-50)$

12. $-200 / 8$

13. $-108 / 9$

14. $-64 / (-7)$

15. $200 / (-25)$

Using Integer Rules While Adding Decimals

Hints/Guide:

Rules for Adding Integers:

1. Adding positive numbers – add the numbers and the answer is positive.
2. Adding negative numbers – add the numbers and the answer is negative.
3. Adding a positive and a negative number – **subtract** the numbers, then
 - if the greater number is positive, the answer is positive
 - if the greater number is negative, the answer is negative.

Examples:

- 1) $8.5 + (-1.4) = 7.1$ positive and a negative -subtract the numbers and use the sign of the greater number
- 2) $-9.2 + 3.1 = -6.1$ negative and a positive - subtract the numbers and use the sign of the greater number
- 3) $-1.5 + (-1.5) = -3.0$ negative and negative - add the numbers and the make the answer negative

Exercises: Follow the rules for adding integers to solve the decimal problems. Remember to line up the decimals. Show all work.

1. $0.7 + (-0.17)$

2. $8.7 + (-6.4)$

3. $-4.5 + (-3.2)$

4. $-6.5 + 4.7$

5. $-3.6 + 1.9$

6. $-5.3 + (-2.8)$

7. $-7.9 + (-6.5)$

8. $24 + 3.1 + (-44) + (-8.2) + 63$

Using Integer Rules While Subtracting Decimals

Hints/Guide:

Rules for Subtracting Integers:

1. Change the subtraction to addition,
2. Change the sign of the number after the subtraction sign to the opposite:
 - if it is a positive number, make it negative
 - if it is a negative number, make it positive
3. Then follow the rules for addition.

Examples:

- 1) $-4.2 - (-3.6) = -4.2 + 3.6 = -0.6$ change the subtraction to addition, and (-3.6) to 3.6
follow the rules for addition
- 2) $-12.4 - 10.9 = -12.4 + (-10.9)$ change the subtraction to addition and 10.9 to (-10.9)
follow the rules for addition
- 3) $8.2 - (-6.1) = 8.2 + 6.1 = 14.3$ change the subtraction to addition and (-6.1) to 6.1
follow the rules for addition

Exercises: Follow the rules for subtracting integers to solve the decimal problems. Remember to line up the decimals. Show all work.

1. $-3.2 - 5.8$

2. $-2.7 - 5.9$

3. $0.99 - 1$

4. $0.87 - 1$

5. $-2.8 - 0$

6. $6.04 - 1.1$

7. $-10.53 + 7$

8. $8 - (-9.3)$

9. $-3.8 - 4.1$

10. $3.1 - (-4.7)$

11. $6.1 - (-13.8)$

12. $1.5 - (-3.5)$

Using Integer Rules While Multiplying Fractions

Hints/Guide:

Rules for Multiplying Integers:

- a positive number times a positive number equals a positive number
positive • positive = positive
- a negative number times a negative number equals a positive number
negative • negative = positive
- a positive number times a negative number equals a negative number
positive • negative = negative
negative • positive = negative

Examples:

1) $\frac{-1}{3} \cdot \frac{5}{7} = \frac{-1(5)}{3(7)} = \frac{-5}{21}$

multiply the numerators together (negative times positive = negative)
multiply the denominators together (positive times positive = positive)

2) $\frac{-5}{6} \cdot \frac{-1}{9} = \frac{-5(-1)}{6(9)} = \frac{5}{54}$

multiply the numerators together (negative times negative = positive)
multiply the denominators together (positive times positive = positive)

Exercises: Follow the rules for multiplying integers to solve the fraction problems. Show all work.

1. $\frac{2}{3} \cdot \frac{-3}{5}$

2. $\frac{5}{7} \cdot \frac{-2}{3}$

3. $\frac{-3}{8} \cdot \frac{-2}{9}$

4. $\frac{-5}{8} \cdot \frac{-2}{5}$

5. $\frac{-5}{9} \cdot \frac{3}{4}$

6. $\frac{-8}{3} \cdot \frac{9}{4}$

7. $\frac{1}{5} \cdot \frac{-2}{9}$

8. $\frac{-3}{5} \cdot \frac{-2}{7}$

9. $\frac{-4}{5} \cdot \frac{10}{3}$

Order of Operations

Hints/Guide:

REMEMBER: Order of Operations**(PEMDAS)****P** - parenthesis**E** - exponents**M/D** - multiply/divide which comes first left to right**A/S** - add/subtract which comes first left to right**Remember to simplify the top of the fraction then bottom of the fraction.****Examples:**

$$\begin{aligned} 1) 15 - 2 \cdot 5 + 3 &= 15 - 10 + 3 \\ &= 5 + 3 \\ &= 8 \end{aligned}$$

multiply first
subtract
add

$$\begin{aligned} 2) 5[4 + (8 - 2)] &= 5[4 + 6] \\ &= 5(10) \\ &= 50 \end{aligned}$$

parenthesis first
add because of parenthesis
multiply**Exercises: Simplify the following expressions. Show all work.**

1. $7 + 2 \cdot 6$

2. $11 + 4 \cdot 4$

3. $8 \cdot 7 + 6 \cdot 5$

4. $10 \cdot 5 + 1 \cdot 1$

5. $19 - 5 \cdot 3 + 3$

6. $14 - 2 \cdot 6 + 7$

7. $6[9 + 3(3 + 4)]$

8. $8[(13 + 6) - 11]$

9. $8 + (7 + 9)$

10. $(8 + 7) + 9$

11. $15(4 + 2)$

12. $15 \cdot 4 + 15 \cdot 2$

13. $\frac{100 - 15}{9 + 8}$

14. $3 + 4[13 - 2(6 - 3)]$

15. $5[2(8 + 5) - 15]$

16. $14 + 6 \cdot 2 - 8 \div 4$

17. $\frac{7(14) - 3(6)}{2}$

18. $14 \div [3(8 - 2) - 11]$

Use parenthesis to make each equation true.

19. $6 + 8 \div 4 \cdot 2 = 7$

20. $5 + 4 \cdot 3 - 1 = 18$

Evaluating Expressions

Hints/Guide:

REMEMBER: Order of Operations

(PEMDAS)

P - parenthesis

E - exponents

M/D - multiply/divide which comes first left to right

A/S - add/subtract which comes first left to right

Remember to simplify the top of the fraction then bottom of the fraction.

Examples:

1) Evaluate $x + y$ for $x = 37$ and $y = 29$

$$\begin{array}{r} x + y \\ 37 + 29 \\ 66 \end{array}$$

2) Evaluate $\frac{3y}{6}$ for $y = 14$

$$\frac{3y}{6} = \frac{3(14)}{6} = \frac{42}{6} = 7$$

Exercises: Evaluate the following expressions. Show all work.

1. $6x$ for $x = 7$

2. $7y$ for $y = 7$

3. $\frac{3p}{q}$ for $p = 2$ and $q = 6$

4. $\frac{5y}{z}$ for $y = 15$ and $z = 25$

5. $\frac{x+y}{5}$ for $x = 10$ and $y = 20$

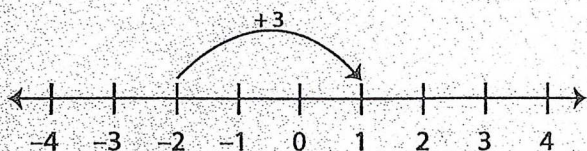
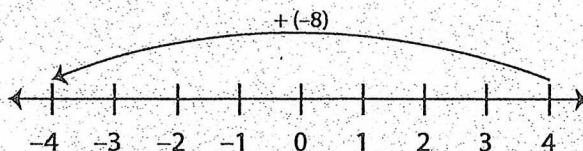
6. $\frac{p+q}{2}$ for $p = 2$ and $q = 16$

Name: _____

Score: _____

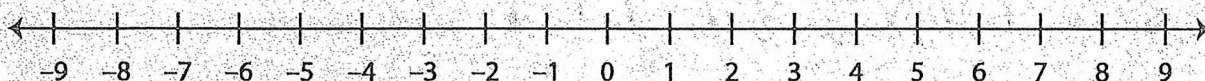
Number Line - Adding Integers

Sheet 1

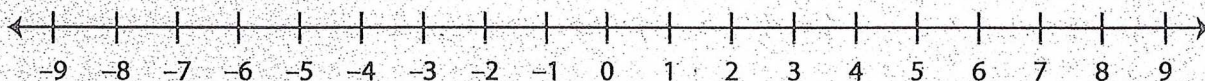
Example 1: $-2 + 3 = 1$ **Example 2:** $4 + (-8) = -4$ 

Use the number line to find the sum.

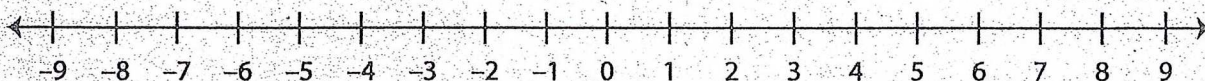
1) $4 + (-5) =$ _____



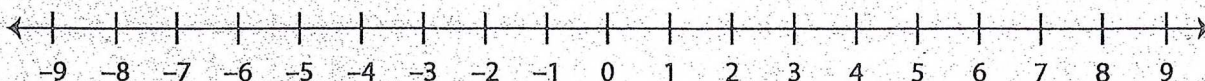
2) $-7 + 2 =$ _____



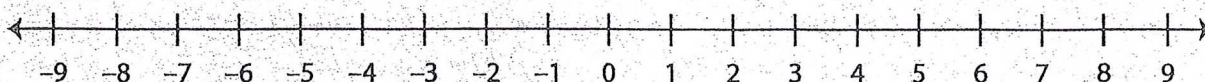
3) $-3 + (-4) =$ _____



4) $1 + 7 =$ _____



5) $3 + (-12) =$ _____



Adding and Subtracting Integers

Evaluate each expression.

1) $1 - (-4)$

2) $4 - 4$

3) $5 - 8$

4) $-5 - 4$

5) $2 - (-5)$

6) $(-7) + (-2)$

7) $(-6) + 4$

8) $1 - (-6)$

9) $(-7) + (-3)$

10) $-3 + 5$

11) $-7 - 4$

12) $4 + (-7)$

13) $7 + (-1)$

14) $1 - 3$

15) $(-2) - (-1)$

16) $(-3) - (-6)$

17) $-7 + 4$

18) $8 - (-2)$

19) $-6 + 3$

20) $-5 + 8$

21) $(-4) - (-2)$

22) $-6 + 8$

23) $4 + (-8)$

24) $3 + (-8)$

25) $-7 - 3$

26) $(-1) + 7$

27) $(-8) - (-8)$

28) $(-7) - (-4)$

29) $-2 - 4$

30) $8 - (-6)$

Convert mixed numbers to improper fractions

Grade 4 Fractions Worksheet

Convert.

1. $3\frac{4}{10} = \frac{34}{10}$

$10 \times 3 = 30 + 4 = 34$

2. $3\frac{1}{3} = \frac{10}{3}$

$3 \times 3 = 9 + 1 = 10$

3. $2\frac{5}{8} =$

4. $2\frac{2}{4} =$

$4 \times 3 =$

5. $3\frac{5}{6} =$

6. $2\frac{2}{8} =$

7. $3\frac{2}{3} =$

8. $1\frac{3}{6} =$

9. $1\frac{7}{8} =$

10. $1\frac{1}{4} =$

11. $1\frac{1}{6} =$

12. $2\frac{4}{5} =$

13. $2\frac{11}{12} =$

14. $2\frac{1}{2} =$

15. $1\frac{1}{2} =$

16. $1\frac{5}{10} =$

17. $2\frac{1}{3} =$

18. $1\frac{3}{4} =$

19. $3\frac{8}{10} =$

20. $3\frac{2}{5} =$

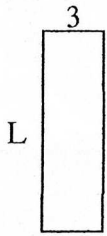
21. $2\frac{2}{3} =$



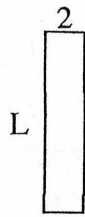
Determine the value of 'L'. Lengths are in cm (not to scale).

Answers

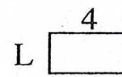
1) perimeter = 26



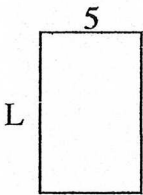
2) perimeter = 22



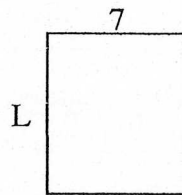
3) perimeter = 12



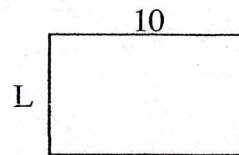
4) perimeter = 26



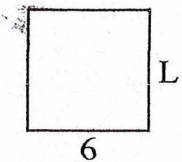
5) perimeter = 30



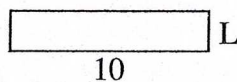
6) perimeter = 32



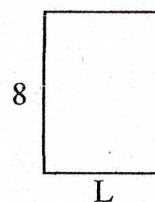
7) perimeter = 24



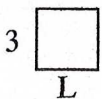
8) perimeter = 24



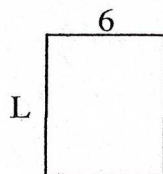
9) perimeter = 28



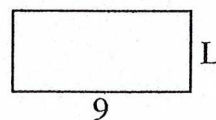
10) perimeter = 12



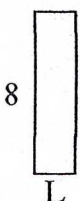
11) perimeter = 26



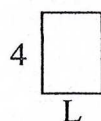
12) perimeter = 26



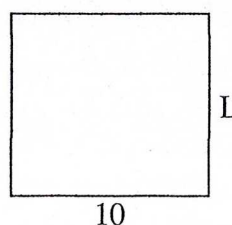
13) perimeter = 20



14) perimeter = 14

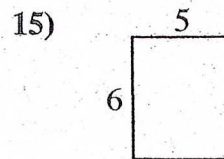
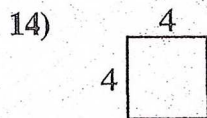
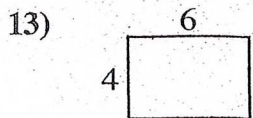
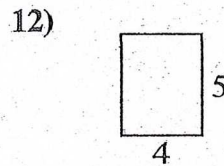
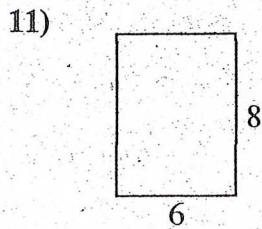
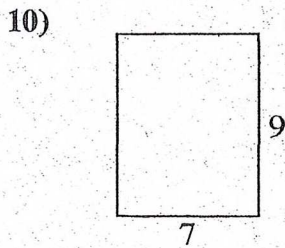
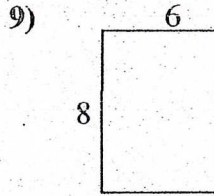
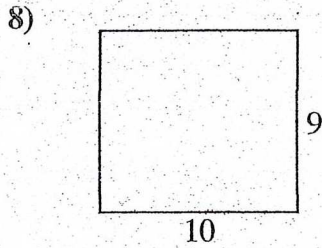
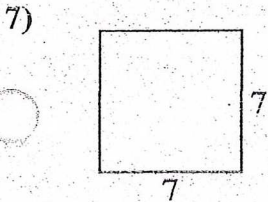
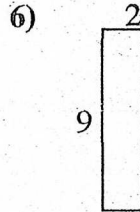
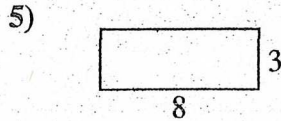
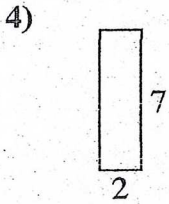
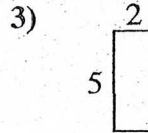
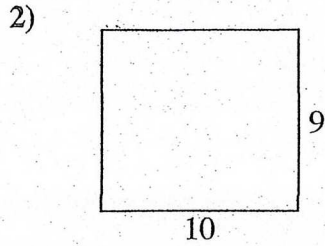
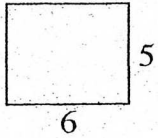


15) perimeter = 38



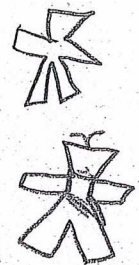
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

Find the perimeter and area of each figure. Each figure is in centimeters (cm). Not to scale.



Answers
Area Perimeter

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____



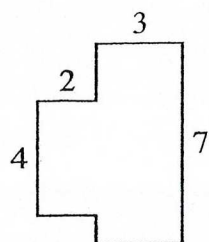
#15



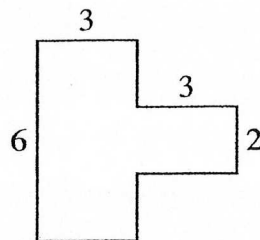
Find the total area of each shape. Measurement is in millimeters (mm). Not to scale.

Answers

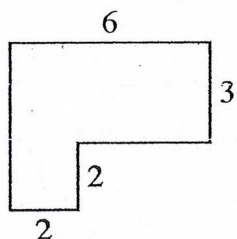
1)



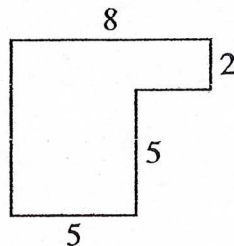
2)



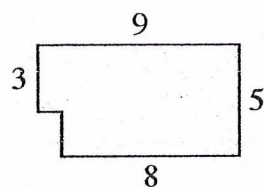
3)



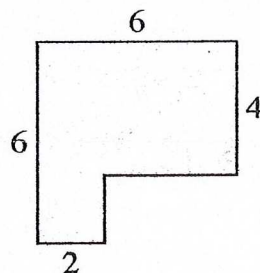
4)



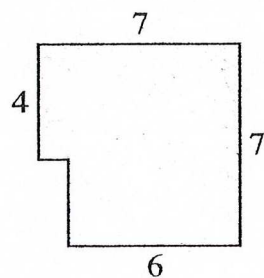
5)



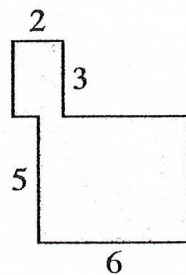
6)



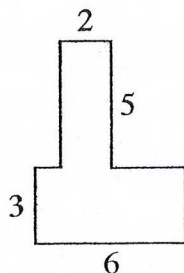
7)



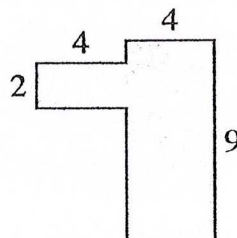
8)



9)



10)



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

#14