Readiness Packet: Grade 8

Name:

Fraction Operations

Add or subtract the given fractions. If the fractions do not have a common denominator, you must write equivalent fractions with a common denominator. Show all work.

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

2. $\frac{1}{12}+\frac{1}{12}$

3. $\frac{16}{21}-\frac{7}{21}$

4. $\frac{1}{6}+\frac{1}{3}$

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

6. $\frac{2}{3}+\frac{1}{8}$

7. $\frac{2}{3}+\frac{1}{3}$

8. $\frac{3}{20}+\frac{7}{20}$

9. $\frac{4}{5}+\frac{6}{7}$

10. $\frac{5}{6}-\frac{1}{9}$

11. $\frac{1}{2}-\frac{3}{4}$

12. $\frac{2}{3}+\frac{2}{15}$

13. $\frac{9}{25}-\frac{4}{25}$

14. $\frac{8}{9}-\frac{5}{9}$

Order of Operations

Remember PEMDAS: Parentheses, Exponents, Multiplication/Division, Addition/Subtraction
Use this order to simplify the following expressions and show all steps.

1. $3+7\cdot5-1$

2. $5\cdot9-3$

3. $3-2+6\cdot2^2$

4. $(3\cdot3-3)^2\div3+3$

5. $2^5-(4\cdot5+3)$

6. $4^3\div8-2$

7. $16+14\div2-7$

8. $64\div2^2+4$

9. $(3^2+11)\div5$

10. $43+16\div4$

Distributive Property

Simplify each expression. Remember to distribute the term outside the parenthesis to each term inside.

1. $4(7+9x)$

2. $8(1+x)$

3. $-5(-2x+6)$

4. $-3(-2x+1)$

5. $7(7+5x)$

6. $6(-7+x)$

7. $-2(8+2x)$

8. $-9(6+x)$

9. $6(-7+2x)$

10. $8(2x+6)$

11. $2(1-8x)$

12. $9(8x-8)$

13. $2(9x+7)$

14. $4(9x+7)$

15. $10(x-6)$

16. $-1(5+2x)$

Substitution

Evaluate each expression for the given value of the variable.

1. $2x - 3$ for $x = 4$

2. $5y - 1$ for $y = 3$

3. $10b - 9$ for $b = 2$

4. $108 - 12j + j$ for $j = 9$

5. $7n + 2n + 5$ for $n = 6$

6. $7s + 6 - 5s$ for $s = 6$

7. $4(2 + 9x) + 7$ for $x = 8$

8. $8 + 4k + 6$ for $k = 9$

9. $2c - 3c$ for $c = 8$

10. $9x + x$ for $x = 2$

11. $2 + 4 - 7r + 5r$ for $r = 4$

12. $-3 + 2 - 8h - 5h$ for $h = 2$

13. $2 - 7x + 8$ for $x = 7$

14. $3y + 6 - 8y$ for $y = 4$

Solving Equations

Solve each equation for the given variable.

1. $x + 12 = 16$

2. $52 + y = 71$

3. $125 = n + 85$

4. $t + 17 = 43$

5. $87 = b + 15$

6. $y - 18 = 7$

7. $c - 21 = 45$

8. $28 = p - 5$

9. $a - 40 = 57$

10. $x - 42 = 7$

11. $5y = 35$

12. $4y = 0$

13. $81 = 9y$

14. $10x = 120$

15. $161 = 7x$

16. $15y = 120$

17. $\frac{x}{12} = 8$

18. $14 = \frac{x}{5}$

19. $\frac{x}{15} = 11$

20. $\frac{x}{4} = 15$

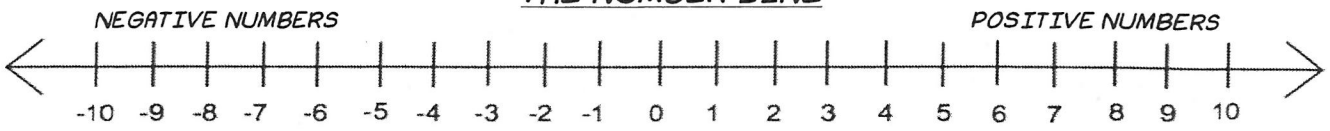
21. $\frac{x}{12} = 12$

22. $\frac{x}{2} = 13$

INTEGER CHEAT SHEET

Integers- A set of positive and negative whole numbers. They can be represented on a number line.

THE NUMBER LINE



Absolute Value- The distance a number is from zero on the number line. An absolute value is never negative. Examples: $|-5| = 5$ and $|5| = 5$

ADDING INTEGERS

SAME SIGN- Add and Keep the Sign!

Add the absolute value of the numbers and keep the same sign.

(positive) + (positive) = Positive

$(+4) + (+5) = +9$

(negative) + (negative) = Negative

$(-4) + (-5) = -9$

DIFFERENT SIGNS- Subtract and Keep the Sign of the Bigger Number!

Subtract the absolute value of the numbers and keep the sign of the bigger number.

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

SUBTRACTING INTEGERS

Do not subtract integers. You must change the signs:
"Add the Opposite"

KEEP- Keep the sign of the first number

CHANGE- Change the subtraction sign to addition

CHANGE- Change the sign of the second number to the opposite sign. If it is positive- change to negative. If it is negative- change to positive.

$(+4) - (-4)$

Keep change change
$(+4) \quad + \quad (+4)$

NOW USE THE RULES FOR ADDING:
SAME SIGN- Add absolute values and keep sign:

$(+4) + (+4) = 8$

MULTPLYING INTEGERS

SAME SIGNS- POSITIVE
Multiply the numbers. Answer will be positive.

$(-5) \times (-5) = +25$

DIFFERENT SIGNS- NEGATIVE
Multiply the numbers. Answer will be negative

$(+5) \times (-5) = -25$

DIVIDING INTEGERS

SAME SIGNS- POSITIVE
Divide the numbers. Answer will be positive.

$(-5) \div (-5) = +1$

DIFFERENT SIGNS- NEGATIVE
Divide the numbers. Answer will be negative

$(+5) \div (-5) = -1$

Rules: ** If a number has no sign it means it is a positive number. **

Addition

SAME SIGNS

1) Add their absolute values.
2) Attach the common signs.

-4 + (- 5) = -(4 + 5) = -9 4 + 5 = 9

OPPOSITE SIGNS

1) Subtract the smaller absolute value from the larger absolute value.
2) Attach the sign of the number with the larger absolute value.

3 + (-9) = -(9 – 3) = -6 -3 + 9 = +(9 – 3) = 6

Subtraction

1) Adding the opposite of a number is equivalent to subtracting the number.
2) Change all problems to addition and follow the addition rules.

3 – 12 = 3 + (-12) = -(12 – 3) = -9

-7 – 1 = -7 + (-1) = -(7 + 1) = -8

-4 – (-10) = -4 + 10 = +(10 – 4) = 6

12 – (-8) = 12 + 8 = 20

NO CALCULATOR!

1. 10 + (-9) =	2. –2 + 15 =
3. 2 – 5 =	4. 15 – 19 =
5. -7 – (-4) =	6. 8 + 27 =
7. – 12 – (-5) =	8. 0 – 9 =
9. 0 – (-7) =	10. -9 – 2 =
11. – 5 + 1 =	12. -3 + (-5) =
13. -9 – (-11) + (-4)=	14. -6 – 5 – (-8) =
15. 24 – 21 + (-20) =	16. -39 – (-30) – 14 =

Integers – Multiplying and Dividing

Rules:

1) If two numbers have the same sign, their product or quotient is positive.
   (-7)(-5) = 35 $6 \bullet 8 = 48$
2) If two numbers have opposite signs, their product or quotient is negative
   9(-2) = -18 (-3)(4) = -12

NO CALCULATOR!

1. (-7)(3) =	2. (5)(-4) =	3. (20)(-60) =	4. $-8 \bullet -5$ =
5. -45 ÷ 5 =	6. $\frac{-24}{-6}$ =	7. 56 ÷ (-7) =	8. $\frac{-99}{11}$ =
9. (4)(-2)(7) =		10. (-2)(-1)(4)(-6) =	
11. -370 ÷ (-10) =		12. $\frac{32}{-8}$ =	
13. (11)(-1)(-8)(-3) =		14. $\frac{39}{3}$ =	
15. (-60) ÷ (-12) =		16. (-6)(8)(-2)(5) =	

Kuta Software - Infinite Pre-Algebra

Name_____

Adding/Subtracting Integers

Date_____ Period____

Find each sum.

1) $(-12) + 7$

2) $(-10) + (-7)$

3) $(-6) + 12$

4) $8 + 7$

5) $3 + 4$

6) $(-45) + 9$

7) $(-1) + (-46)$

8) $(-30) + 10$

9) $(-34) + 50$

10) $38 + (-5)$

Find each difference.

11) $2 - (-2)$

12) $(-1) - 10$

13) $8 - 7$

14) $(-8) - (-6)$

15) $11 - 4$

16) $48 - (-31)$

17) $18 - 41$

18) $(-38) - 30$

19) $(-1) - (-3)$

20) $(-1) - (-40)$

Evaluate each expression.

21) $(-10) - 47$

22) $(-29) - 29$

23) $13 + (-29)$

24) $38 + 22$

25) $(-32) - 44$

26) $(-12) + (-11)$

27) $2 + 15 + 4$

28) $16 + (-13) + 5$

29) $2 - (-9) - 8$

30) $10 + 3 - (-8)$