Name: Key

Hour: _____

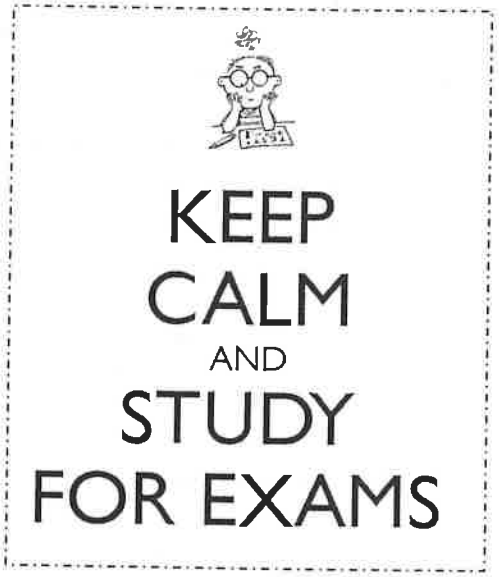
TRIMESTER ONE FINAL EXAM REVIEW

Final exams are quickly becoming a regular expectation for you. In order to help you prepare for this, we will be taking a "final" exam each trimester. On – you will take the Pre-Algebra Trimester One Final Exam. This exam will assess the content we covered in the first trimester.

You have already seen the final exam. You took it the first week of school. This provides you the opportunity to look at your growth and see your areas of strength and those that still may need some improving.

This review packet is a great resource as well as your note packets and unit assessments. We will go over the problems from this packet prior to the exam. It is a great idea to do a little bit of the packet at a time. Try not to procrastinate – cramming all this information in right before the exam is not a good studying technique!

This final will be included in your grade as one assessment grade. It is imperative that you learn how to prepare for final exams and what to expect when it comes to taking these types of summative assessments.



CONTENT COVERED in the FIRST TRIMESTER:

Unit One: Back to the Basics

- Decimals
  - Rounding
  - Adding
  - Subtracting
  - Multiplying
  - Dividing
- Number Properties
  - Commutative
  - Associative
  - Distributive
  - Identity
- Order of Operations

Unit Two: Integers

- Absolute Value & Opposites
- Integers
  - Adding
  - Subtracting
  - Multiplying
  - Dividing
- Exponents & Square Roots
- Order of Operations

Unit Three: Rational Numbers

- Prime & Composite Numbers
- Greatest Common Factor (GCF)
- Least Common Multiple (LCM)
- Fraction to Decimal
- Decimal to Fraction
- Fractions
  - Adding
  - Subtracting
  - Multiplying
  - Dividing

Unit Four: Variable Expressions

- Evaluate Variable Expressions
- Identify Parts of an Expression
- Combine Like Terms
- Distributive Property
- Simplify Variable Expressions

Unit One: Back to the Basics

Round to the nearest whole number:

1. 41.803 42
2. 119.63 120
3. 20.05 20
4. 3.45 3

Round to the nearest tenth:

1. 33.335 33.3
2. 1.861 1.9
3. 99.96 100
4. 103.103 103.1

Round to the nearest hundredth:

1. 69.713 69.71
2. 5.569 5.57
3. 609.906 609.91
4. 247.898 247.9

Add, Subtract, Multiply, or Divide the Decimals:

1. $12.16 - 8.72 =$ 3.44
2. $119.7 + 11.97 =$ 131.67
3. $3.4(8) =$ 27.2
4. $2960 \div 0.37 =$ 8000
5. $329.82 + 6.129 =$ 335.949
6. $893.631 - 11.09 =$ 882.541
7. $132.03 \div 8.1 =$ 16.3
8. $(16.1)(3.66) =$ 58.926

Write the Number Property that is illustrated by the given equation:

1. $6 * 9 = 9 * 6$ Commutative - multiplication
2. $7 + 15 = 15 + 7$ Commutative - addition
3. $69 + (31 + 23) = (69 + 31) + 23$ associative - addition
4. $20 * (5 * 17) = (20 * 5) * 17$ associative - Multiplication
5. $x + 2.5 = 2.5 + x$ Commutative - addition
6. $3(n * 8) = 3(8n)$ Commutative - Multiplication
7. $3(8n) = (3 * 8)n$ associative - Multiplication
8. $11 + (w + 2) = (11 + 2) + w$ Commutative - addition and/associative - addition
9. $a + 0 = a$ additive identity
10. $5 * 1 = 5$ Multiplicative identity

Unit Two: Integers

Use the chart to classify the numbers below:

	Real	Rational	Irrational	Integer	Whole	Counting
-5	X	X		X		
3.54786763...	X		X			
-2.5	X	X				
0	X	X		X	X	
345	X	X		X	X	X
$\frac{8}{9}$	X	X				
74.4444444...	X	X				
$\sqrt{64}$	X	X		X	X	X
-32.0	X	X		X		
16.5479475...	X		X			

Opposites and Absolute Value:

1. $|-12| =$ 12
2. $-\left|5\frac{1}{2}\right| =$ $-5\frac{1}{2}$
3. $|-5| + |9| =$ 14
4. $7 + |-3| =$ 10
5. $|7| + |-7| =$ 14
6. $-(-3+4) =$ -1
7. $-(9-9) =$ 0
8. $|9| - |-12| =$ -3
9. $|-3| + |9| - 6 =$ 6
10. $-3|5| - |5| =$ -20

Add, Subtract, Multiply, or Divide the Integers:

1. -3 + (-5) = -8
2. 6 + 4 = 10
3. 8 + (-2) = 6
4. 7 + (-7) = 0
5. -3 + 5 = 2
6. -4 + 9 = 5
7. 6 + (-13) = -7
8. -5 + 5 = 0
9. -6 + (-6) = -12
10. 4 + 2 = 6
11. 6 – 8 = -2
12. -4 – 8 = -12
13. 5 -9 = -4
14. 8 – 5 = 3
15. -3 – 6 = -9
16. -8 – 8 = -16
17. 5 – (-9) = 14
18. -6 – (-4) = -2
19. 2 – (-9) = 11
20. -1 – 6 = -7
21. -8 * 2 = -16
22. 5 * -6 = -30
23. -3 * -7 = 21
24. -8 * (-1) = 8
25. 5 * 0 = 0
26. -7 * 0 = 0
27. -4 * (-4) = 16
28. 0 * 8 = 0
29. -1 * 9 = -9
30. -11 * 3 = -33
31. 24 ÷ -4 = -6
32. 16 ÷ (-8) = -2
33. 10 ÷ (-2) = -5
34. -15 ÷ 3 = -5
35. -9 ÷ (-3) = 3
36. 0 ÷ -3 = 0
37. -1 ÷ (-1) = 1
38. 8 ÷ (-4) = -2
39. -2 ÷ (-2) = 1
40. -5 ÷ 1 = -5
41. -5 + (-3) = -8
42. -8 * 5 = -40
43. -6 – 4 = -10
44. (10)(-2) = -20
45. 5 – 14 = -9
46. -7 * (-7) = 49
47. -8 + 8 = 0
48. -18 ÷ (-9)= 2
49. 0 * (-3) = 0
50. 4 + (-14) = -10
51. -5 – (-15) = 10
52. 14 – 6 = 8
53. -3 – 3 = -6
54. -5 + (-5)= -10
55. -36 ÷ (-6) = 6
56. 25 ÷ (-5) = -5
57. -2 * (-5) = 10
58. -6 + (-3) = -9
59. 0 + 0 = 0
60. $|-6|$ = 6

Use the Exponent Rules for Multiplication and Division to simplify:

1. $x^{10} * x^{11}$ x^{21}
2. $g^8 * g^9$ g^{17}
3. $h^7 * h^2 * h^8$ h^{17}
4. $\frac{k^{16}}{k^8}$ k^8
5. $8f^9 * 7f^{10}$ $56f^{19}$
6. $\frac{y^{20}}{y^{14}}$ y^6
7. $\frac{m^{19}}{m^{15}}$ m^4
8. $d^4 * d^5$ d^9
9. $\frac{x^{15}}{x^9}$ x^6
10. $\frac{15x^{11}}{18x^7}$ $\frac{5x^4}{6}$

Use Order of Operations to solve:

1. $-9 \div -3 + 4 * -\frac{1}{4} - 20 \div 5 =$ $3 + (-1) - 4 = -2$
2. $\left(8\frac{1}{3} + 3\frac{2}{3}\right) \div 4 - (-16) =$ $(12 \div 4) + 16 = 19$
3. $\frac{\left(80 * \frac{1}{2}\right) + 35}{-10 + 25} =$ $\frac{40 + 35}{15} = \frac{75}{15} = 5$
4. $2(-6(3 - 12) - 17) =$ $2(-6(-9) - 17) = 2(54 - 17) = 2(37) = 74$
5. $3 * 2[4 + (9 \div 3)] =$ $3 \cdot 2(4 + 3) = 3 \cdot 2(7) = 3(14) = 42$
6. $50 \div [(4 * 5) - (36 \div 2) + -9] =$ $50 \div [(20 - 18) - 9] = 50 \div (2 - 9) = 50 \div -7$ $= -7\frac{1}{7}$

Unit Three: Rational Numbers

Write all the factors of the number. State whether the number is prime or composite:

1. 28 1, 2, 4, 7, 14, 28 Composite
2. 44 1, 2, 4, 11, 22, 44 Composite
3. 46 1, 2, 23, 46 Composite
4. 97 prime
5. 127 prime

Write the prime factorization for each number:

1. 248

62 4

31 2 2 2

$\boxed{2^3 \cdot 31}$

2. 360

36 10

6 6 5 2

3 2 3 2

$\boxed{2^3 \cdot 3^2 \cdot 5}$

Find the Greatest Common Factor:

1. 28 and 60 1, 2, 4, 7, 14, 28
1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30, 60

2. 28 and 70 1, 2, 4, 7, 14, 28
1, 2, 5, 7, 10, 14, 35, 70

3. 48 and 80 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
1, 2, 4, 5, 8, 10, 16, 20, 40, 80

4. 66 and 71
1, 2, 3, 6, 11, 22, 33, 66
1, 71
Relatively prime

Find the Least Common Multiple:

1. 24 and 28
24, 48, 72, 96, 120, 144, 168
28, 56, 84, 112, 140, 168

2. 20 and 36
20, 40, 60, 80, 100 ... 180
36, 72, 108, 144, 180

3. 42 and 63
42, 84, 126
63, 126

4. 5 and 10
5, 10
10

Change the Fraction to a Decimal:

1. $\frac{3}{5} = \frac{6}{10} = .6$

2. $\frac{11}{25} = \frac{44}{100} = .44$

3. $\frac{7}{15} = .4\overline{6}$

$15\overline{)7.00}$ $.4\overline{6}$

4. $2\frac{1}{9} = 2.\overline{1}$

$9\overline{)1.00}$ $.11\ldots$

5. $\frac{23}{33} = .\overline{69}$

$33\overline{)23.00}$ $.69\ldots$

6. $1\frac{5}{16} = 1.3125$

7. $\frac{12}{25} = \frac{48}{100} = .48$

8. $\frac{2}{9} = .\overline{2}$

$9\overline{)2.00}$ $.22\ldots$

Change the Decimal to a Fraction:

1. 0.125 $\frac{125}{1000} = \frac{1}{8}$
2. $0.\overline{6}$ $\frac{2}{3}$
3. 0.36 $\frac{36}{100} = \frac{9}{25}$
4. $0.\overline{46}$ $\frac{46}{99}$
5. 0.6875 $\frac{6875}{10,000} = \frac{11}{16}$
6. 0.55 $\frac{55}{100} = \frac{11}{20}$

Add, Subtract, Multiply and Divide Fractions:

1. $8\frac{1}{15} - 5\frac{11}{20} =$ $2\frac{31}{60}$
2. $3\frac{1}{9} + -8\frac{3}{7} + 1\frac{1}{3} =$ $-3\frac{62}{63}$
3. $1\frac{7}{8} * 3\frac{3}{5} =$ $6\frac{3}{4}$
4. $-4\frac{4}{5} \div 2\frac{8}{10} =$ $-1\frac{5}{7}$
5. $7 - \left(3\frac{7}{9} \div 4\frac{2}{3}\right) =$ $6\frac{4}{21}$
6. $4\frac{2}{3} * -1\frac{3}{4} * 3\frac{3}{4} =$ $30\frac{5}{8}$
7. $12\frac{1}{2} - (-7\frac{15}{16}) =$ $20\frac{7}{16}$

Unit Four: Variable Expressions

Write the written expression as a variable expression:

1. The sum of 6 and a number. $6+x$
2. The difference of a number and 15. $x-15$
3. The product of a number and 5. $5x$
4. 3 times the quantity of the sum of a number and -2. $3(x+(-2))$
5. 15 less than some number. $x-15$
6. The quotient of a number and 12. $\frac{x}{12}$

Identify the parts of the expression:

$$\underline{18ab} + \underline{-6a} + \underline{-7b} + \underline{26ab} + \underline{-7b}$$

1. Number of Terms: 5
2. Coefficients: 18, -6, -7, 26, -7
3. Like Terms: 18ab and 26ab -7b and -7b
4. Constant Terms: none

Evaluate the variable expression when $a = \frac{1}{2}, x = 4$ *and* $y = -2$

1. $4(a-1) =$ $4(\frac{1}{2}-1) = 4(-\frac{1}{2}) = -2$
2. $4a - 3y =$ $4(\frac{1}{2})-3(-2) = 2+6 = 8$
3. $4(x-3y) =$ $4(4-3(-2)) = 4(4+6) = 4(10) = 40$
4. $x(a+6) =$ $4(\frac{1}{2}+6) = 4(6\frac{1}{2}) = 26$
5. $3x + 2(a-y) =$ $3(4)+2(\frac{1}{2}-(-2)) = 12+2(2\frac{1}{2}) = 12+5=17$
6. $10x(8a + -4y) + (-3y)$ $10(4)(8(\frac{1}{2})+-4(-2))+(-3(-2)) =$
   $40(4+8)+6 =$
   $40(12)+6$
   $480+6 =$
   486

Use the distributive property to simplify the expression:

1. $-7(a+b)$ $-7a-7b$
2. $3(2x-8)$ $6x-24$
3. $7(-5x-8)$ $-35x-56$
4. $-(3x+8y-7)$ $-3x-8y+7$
5. $-2(m-4)$ $-2m+8$

Simplify the expression by combining like terms:

1. $4a+7+3a-8-3a$ $4a-1$
2. $4a+8b+11a-10b$ $15a-2b$
3. $6c-8ab+9c-10$ $-8ab+15c-10$
4. $5x-3x+2xy+31x-(-18xy)$ $+33x+20xy$
5. $3x(5-x)+4x-(-5x)+3-x+4$

   $15x-3x^2+4x+5x+3-x+4 = -3x^2+23x+7$
6. $4(x-6)-(2x+5)-3x$

   $4x-24-2x-5-3x = -x-29$