

7PA1 Week 1 – Order of Operation, Expressions, Integer

Videos to watch before this week's math:

<https://www.youtube.com/watch?v=qNayDOM5kkM>

https://www.youtube.com/watch?v=o_4MV5Tz7r4&t=512s

<https://www.youtube.com/watch?v=CARkStA-QSc>

<https://www.youtube.com/watch?v=boJ42fK8Wiw>

<https://www.youtube.com/watch?v=V7yZcBYdwbo>

Simplify the expression using order of operations.

Underline what you work on in each step. Show all your work!

Remember: 4 STEPS 1. Parenthesis ()

2. Exponents

3. Multiply/Divide (left to right)

4. Add/Subtract (left to right)

1. $11 \cdot 7 - 9 \cdot 5$

2. $10 \cdot [6 + (8 \cdot 2)]$

3) $5(18 - 3^2) + 12$

4. $[(7 - 3)^2 + 2] \div 3$

5) $72 \div [(15 - 9) \cdot 2]$

6. $\frac{10^2 - 5^2}{2^3 + 7}$

Evaluate the expression when $x = 4$ and $y = 9$.

7. $3[(x^2 - y) + 6]$

8. $10(y^2 - x^3)$

Evaluate the expression when $x = -2$, $y = 4$ and $z = 3$. (Signs indicate ABSOLUTE VALUE-distance from zero)

9. $|y - x| + z$

10. $|x + y - 3|$

Translate words into algebraic expressions. Use "n" as a variable.

11) three less than twice a number

12) the quotient of a number and seven

13) the product of eight and a number decreased by four

14) three-fourths of the sum of a number and twelve

Operations with integers.

Find the sum.

15. $7 + (-9) + 15$

16. $55 + (-28) + (-6)$

Find the difference. Don't forget to add the opposite!

17. $-86 - (-34)$

18. $24 - 41$

Find the product or quotient. Simplify.

19. $-2(-14) \div (-7)$

20. $[-2(-5)(4)(-3)] \div 2$

7PA1 Week 2 – Simplifying Variable Expressions and Equations

Videos to watch before this week's math:

<https://www.youtube.com/watch?v=bFVzAntlVTw&t=1s>

https://www.youtube.com/watch?v=P6_sK8hRWCA

https://www.youtube.com/watch?v=o_4MV5Tz7r4&t=179s

https://www.youtube.com/watch?v=L0_K89UJfJY

Simplify the expression. COMBINE LIKE TERMS

1. $12k - 9 - 7k + 20$

2. $4m + 12 - 3(2m + 2)$

3. $15x - (10 + 15x)$

4. $3k - 8(k + 2)$

Solve the equation. Check your solution. COMBINE LIKE TERMS then get VARIABLE ALONE.

5. $n - 6 - 1 = 5$

6. $9 + x - 4 = 2$

7. $-44 = f - 6$

8. $84 = -21v$

Solve the equation with decimals.

9. $12.6 + m = 9.2$

10. $r - 2.3 = -1.7$

11. $-12.2x = 9.76$

12. $\frac{c}{-4} = -10.5$

Solve the equations. USE DISTRIBUTIVE PROPERTY.

13. $-2(a + 3) = -24$

14. $-11x - (2 - 8x) = -14$

15. $7g + 14 - 3g = 6$

16. $4 = 6(3 - 2w) - 14$

Solve the equation with variables on both sides. STEPS: 1. Use Distribute Property if possible, 2. Combine like terms, 3. Get variables to one side, numbers on the other side, 4. Isolate variable to solve.

17. $13 - 3p = -5(3 + 2p)$

18. $2(-4h - 13) = 37 + 13h$

Write the verbal sentence as an equation. Then solve the equation.

19. Nine plus 2 times a number is equal to 2 less than 3 times the number.

20. Twelve less than -9 times a number is equal to 8 minus 4 times the number.

7PA1 Week 3 Inequalities, GCF, LCM, Exponents

Videos to watch before this week's work:

https://www.youtube.com/watch?v=elkZAKVz_f8

https://www.youtube.com/watch?v=o_4MV5Tz7r4

<https://www.youtube.com/watch?v=BI4ZAboUvG0>

<https://www.youtube.com/watch?v=lvefwveWexA>

<https://www.youtube.com/watch?v=Zt2fdy3zrZU>

Solve the inequality. Graph your solution. Don't forget to reverse the sign when you multiply or divide at the end when you isolate the variable. When you graph, remember to read the inequality starting with the variable.

1. $w - 18 < -10$

2. $-3a - 6 \leq -9$

3. $4(2 - d) \geq -12$

4. $2c - 5 < -21$

Write the verbal sentence as an inequality. Then solve the inequality.

5. Seven times a number minus 5 is less than or equal to 16.

6. Eight times the sum of 5 and a number is less than 56.

Using prime factorization, find the greatest common factor of the numbers.

7. 12, 30, 15

Find the greatest common factor of the monomials. "What do they have in common?"

8. $20x^2$, $36x$

Using prime factorization, find the least common multiple of the numbers.

9. 16, 24

Find the least common multiple of the monomials.

10. $14x^4$, $21x^2$

Exponents. Reminder - When you multiply with the same base, you add exponents.
When you divide by the same base, you subtract exponents.
Simplify the coefficients.
For any nonzero number a , $a^0 = 1$
For any nonzero number a and any integer n , $a^{-n} = \frac{1}{a^n}$.

Simplify.

11. $b^7 \cdot b^9 \cdot b^2$

12. $3g^2 \cdot 2g^4$

13. $\frac{z^{12}}{z^6}$

14. $\frac{9a^4c^3}{27ac^2}$

Write the expression, product or quotient using only positive exponents.

15. 7^{-2}

16. $5x^{-3} \cdot 3x^{-8}$

17. $\frac{2^5}{2^8}$

18. $\frac{15b^{-5}}{3b^4}$

7PA1 Week 4 - Fractions

Videos to watch before you start this week's work:

<https://www.youtube.com/watch?v=sLbiWpoL88Q>

<https://www.youtube.com/watch?v=NqL4p9ncc7g>

<https://www.youtube.com/watch?v=PguxWIBqwrS>

<https://www.youtube.com/watch?v=pi3WWQ0q6Lc>

<https://www.youtube.com/watch?v=8mRoR06T1Ak>

Find the sum or difference. Don't forget you need a common denominator!

1. $2\frac{3}{6} + 2\frac{5}{6}$

2. $-9\frac{1}{3} + 1\frac{2}{3}$

3. $\frac{3}{4} - \frac{3}{8}$

4. $5\frac{2}{9} - 7\frac{8}{15}$

Simplify the expression. Remember you need a common denominator. Watch your signs and simplify your answers.

5. $-\frac{3x}{22} - \frac{5x}{44}$

6. $\frac{2y}{15} - \frac{3y}{10}$

Find the product or quotient. Always change mix numbers into improper fractions and then cross cancel where you can.

7. $-24 \cdot \left(-\frac{7}{16}\right)$

8. $-3\frac{1}{3} \cdot 5\frac{13}{20}$

9. $-\frac{11}{12} \div \frac{3}{8}$

10. $-7\frac{7}{9} \div -1\frac{11}{45}$

Solve the equation. Reminder- multiply by the multiplicative inverse or reciprocal at the end to make the coefficient in front of the variable 1.

11. $\frac{5}{14}c = -\frac{1}{2}$

12. $\frac{2}{7}x - 5 = 17$

Solve the equation by first clearing the fractions.

(Reminder- look at the denominators and figure out the lowest common multiple. Then multiply EACH term by the LCM to clear the denominators. Then solve for the variable. Hint: for number 13 the LCM is 12. Multiply all 3 terms by 12 and this will cancel out the denominators)

13. $\frac{1}{4}x + \frac{1}{6} = -\frac{5}{12}$

14. $\frac{3}{8} = -\frac{1}{4}x - \frac{3}{5}$

7PA1 Week 5 – Ratio, Proportion, and Probability

Watch these videos before starting this week's work:

<https://www.youtube.com/watch?v=NseFLvrJCtw>

<https://www.youtube.com/watch?v=Zm0Kalw-35k>

<https://www.youtube.com/watch?v=MAjEfC9CFGk>

Find the unit rate.

1. $\frac{\$180}{5 \text{ people}}$

2. One box of cereal is 20 ounces and costs \$3. A smaller box of the same type of cereal is 12 ounces and costs \$2. Which box of cereal is the better buy?

3. Write the equivalent rate. (make sure the units are the same)

$$\frac{\$43}{1 \text{ day}} = \frac{? \text{ dollars}}{1 \text{ week}}$$

Solve using proportions.

4. In a batch of 120 manufactured machine parts, 3 are found to be defective. At this rate, how many machine parts would be defective in a batch of 12,000?

5. At a store, 5 erasers cost \$2.50. How many erasers can you buy for \$7.50?

6. $\frac{1.4}{1.05} = \frac{4}{r}$

7. Find the value of x. (Cross multiply, solve for x and don't forget to simplify)

$$\frac{39}{x+7} = \frac{21}{7}$$

8. A map using a scale of 1 inch = 5 miles. Two towns on the map are 4.5 inches apart. How far apart are the actual towns? Use proportions to solve.

7PA1 Week 6 - Percent and Percent Application

Watch the following videos before starting this week's work:

<https://www.youtube.com/watch?v=Aj0OvQMBNg8>

<https://www.youtube.com/watch?v=QDx9n7LWHDl>

<https://www.youtube.com/watch?v=UyLeIn1y8tM>

Write the percent as a fraction or the fraction as a percent.

1. a) $\frac{7}{20}$

b) 85%

c) 28%

d) $\frac{24}{25}$

Write the decimal as a percent or the fraction as a percent.

2. a) 4

b) $\frac{3}{8}$

c) 0.48

d) $\frac{6}{5}$

Find the percent of the number.

3. a) 5% of 675 b) 15% of 450

Use a proportion to answer.

4. 36 is 24% of what number?

5. What percent of 120 is 108?

Use the percent equation.

6. What percent of 70 is 245?

7. 27 is 7.5% of what number?

