# 8th Math Homework Week 1

## Translating Phrases into Expressions

For each problem, CIRCLE the word(s) that describe a math operation.
Write the corresponding algebraic expression.

**algebraic expression:** phrase that contains numbers, operations, and variables

| Words | Algebraic Expression |
|---|---|
| 1. The sum of a number and ten. Example! | x + 10 |
| 2. Eighteen more than a number. | |
| 3. Five less than a number. | |
| 4. The product of a number and three. | |
| 5. The difference of a number and seven. | |
| 6. The difference of seven and a number. | |
| 7. Two more than a number. | |
| 8. Sixteen less than twice a number. | |
| 9. Five times the sum of a number and four. | |
| 10. Three times the difference of a number and one. | |
| 11. The quotient of a number and six. | |
| 12. Two-thirds of a number. | |
| 13. Eight more than a twice a number. | |
| 14. The difference of a number and eight, divided by ten. | |
| 15. Three more than the sum of a number and four. | |
| 16. Double the difference of a number and seven. | |
| 17. Nine less than the product of a number and two. | |
| 18. The quotient of two and three more than a number. | |
| 19. The product of triple a number and five. | |
| 20. Sixteen less than the sum of three and a number. | |

# 8th Math Homework Week 1

## Equivalent Expressions Homework

Determine if the following expressions are equivalent. Write "equivalent" or "not equivalent." YOU MUST **PROVE** YOUR ANSWER BY SHOWING YOUR WORK ON A *DIFFERENT* SHEET OF PAPER.

**1.)** 2x + x - 7 & 2(x – 3) + x - 1

**2.)** -3 + -2x + -5 & -2(x + 4)

**3.)** 7 – (2t + 4) & 7 + 2t - 4

**4.)** 3y – 2(y + 8) + 3 & $\frac{1}{2}(2y - 24) - 1$

**5.)** 7z – 3z + 2(4z – 8) & 4(3z – 2)

**6.)** 2w + 12w – 4w & 2 + 12 – 4

**7.)** 7 – (x + 2) + 4x & 3(x + 5) - 10

**8.)** $\frac{1}{2}(4x - 8)$ & x + x + 2 + 2

## Solving Multi-Step Equations

Solve each equation. Check your work. SHOW YOUR WORK ON A *DIFFERENT* SHEET OF PAPER.

**1.)** 28 = 8x + 12 – 7x

**2.)** 2y – 7 + 5y = 0

**3.)** 2.4 = 3(m + 4)

**4.)** 4t + 7 – t = 19

**5.)** $4 - \frac{\mathrm{m}}{2} = 10$

**6.)** $\frac{x}{8} - \frac{1}{2} = 6$

**7.)** 5(1 – 2w) + 8w = 15

**8.)** 6 = -2(7 – c)

**9.)** -3x – 8 + 4x = 17

**10.)** 17 = 3(p – 5) + 8

**11.)** $\frac{1}{5} - \frac{x}{5} = -\frac{2}{5}$

**12.)** $2\mathrm{d} + \frac{1}{5} = \frac{3}{5}$

**13.)** If 2x + 13 = 17, find the value of 3x + 1.

**14.)** If 9 – 6x = 45, find the value of x – 4.

**15.)** If 5(y + 10) = 40, find the value of $\frac{1}{4}y$.

*It is your responsibility to compare your final answers with the answer key.*
*Try to identify your errors and correct your mistakes prior to class.*
*Come to class or tutoring prepared with questions for problems you couldn't correct.*

## Week 1 Homework Answer Key

*The answer keys provided are intended to help you monitor your learning. Since I am providing the answers, I expect work for ALL problems. If your answer is incorrect, return to the problem and try to identify your error. Tutoring will be available at 8:15 to assist any further questions.*

***No work = No credit for homework***

*Tuesday*

**Translating Phrases into Expressions**

| | | | |
|---|---|---|---|
| 1. | x+10 | 11. | x/6 |
| 2. | x + 18 | 12. | (2/3)x |
| 3. | x – 5 | 13. | 2x + 8 |
| 4. | 3x | 14. | (x-8)/10 |
| 5. | x – 7 | 15. | (x+4) + 3 |
| 6. | 7 – x | 16. | 2(x – 7) |
| 7. | x + 2 | 17. | 2x – 9 |
| 8. | 2x – 16 | 18. | 2/(x+3) |
| 9. | 5(x+4) | 19. | (3x)(5) |
| 10. | 3(x-1) | 20. | (3 + x) – 16 |

*Wednesday*

**Equivalent Expressions Homework**

1. Yes
2. Yes
3. No
4. Yes
5. No
6. No
7. Yes
8. No

*Thursday*

**Solving Multi-Step Equations**

| | | | |
|---|---|---|---|
| 1. | 16 | 9. | 25 |
| 2. | 1 | 10. | 8 |
| 3. | -3.2 | 11. | 3 |
| 4. | 4 | 12. | 1/5 |
| 5. | -12 | 13. | 7 |
| 6. | 52 | 14. | -10 |
| 7. | -5 | 15. | -1/2 |
| 8. | 10 | | |


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