

T101 REVIEW (Chapter 4)

(Edited spring 2010)

This worksheet is a review only. It is not meant a sample test. Be sure to review all notes, textbook homework, MyMathLab homework and quizzes.

- 1) Write an algebraic expression describing each of the following:
 - a. double a number
 - b. Eight less than a number
 - c. Two more than five times a number
- 2) Write an algebraic expression describing each of the following: (Simplify completely)
 - a. the sum of 2 consecutive numbers
 - b. The cost of renting a video movie for n days if the charge is \$3 plus \$2 per day of renting.
 - c. Three less than five times a number
- 3) Write an algebraic expression describing each of the following: (Simplify completely)
 - a. Eight more than twice a number
 - b. The cost of a taxi ride for n miles if the charge is \$2.50 plus \$.50 per mile
 - c. The sum of 2 consecutive odd numbers
 - d. Joel's total earning after 3 years if the first year his salary was s dollars, the second year it was \$3000 higher, and the third year it was twice as much as the first year.
 - e. Mark has half as many stickers as Derek. If Derek has d stickers and Mark m stickers, and Derek gives Mark 26 stickers, how many stickers does each have in terms of d ?
- 4) Solve each of the following equations:
SHOW ALL STEPS AND WORK.
 - a. $3x - 8 = 55$
 - b. $7 + 2x = 4x - 11$
 - c. $-2(x + 3) = x$
 - d. $3(4 - 2x) = 24$
 - e. $4x + 3 = 31$
 - f. $-5 - y = 16$
 - g. $4 - 2x = 16$
 - h. $3x - 7 = 5x + 7$
 - i. $4(3 - x) = -6x$
- 5) On August 4, the Abbott family received 19 pieces of mail, consisting of magazines, bills, letters, and ads. If they received the same number of magazines as letters, three more bills than letters, and five more ads than bills, how many magazines did they receive?
USE AN EQUATION TO SOLVE.
- 6) A teacher performs a magic trick with his class. He tells his class to pick a number (any number). Add 4 to the number. Multiply your result by 6. Subtract 9 from that product. Divide this by 3. And finally subtract 5.
USING ONLY ALGEBRAIC NOTATION (pick x as your original number) walk your way through this trick and then describe how the final answer relates to the original number chosen by the student.
- 7) A teacher performs a magic trick with his class. He tells his class to pick a number (any number). Subtract 5 from the number. Multiply your result by 10. Add 16 to that product. Divide this by 2. And finally add 17.
USING ONLY ALGEBRAIC NOTATION (pick x as your original number) walk your way through this trick and then describe how the final answer relates to the original number chosen by the student.
- 8) A drink and a sandwich together cost \$6.00. The sandwich costs \$2.30 more than the drink. How much does the sandwich cost?
USE AN EQUATION TO SOLVE.
- 9) A pencil box and a notebook together cost \$4.25. The notebook costs \$1.25 more than the pencil box. How much does the notebook cost?
USE AN EQUATION TO SOLVE.
- 10) A pencil box and a notebook together cost \$2.10. The notebook costs 75¢ more than twice pencil box. How much does the notebook cost?
USE AN EQUATION TO SOLVE.

11) For safety reasons, the local preschool allows their students to ride only on tricycles and wagons. If I count 73 riding toys in the yard with total of 276 wheels, how many tricycles and how many wagons does the preschool own? **USE AN EQUATION TO SOLVE.**

12) If you have a bunch of 10 cent stamps and 5 cent stamps, and you know that there are 20 stamps and their value is \$1.50, how many of each stamp do you have?

USE AN EQUATION TO SOLVE.

13) Ron and Kathy are ticket-sellers at their class play. Ron is selling student tickets for \$4.00 each, and Kathy selling adult tickets for \$6.50 each. If their total income for 28 tickets was \$154.50, how many tickets did Ron sell?

USE AN EQUATION TO SOLVE.

14) The set of ordered pairs is a function. Find a rule that could describe the function.
 $\{(6, 18), (7, 21), (9, 27), (11, 33)\}$

15) Find a function such that the domain is the set of natural numbers and the output produces the terms of the sequence 9, 13, 17, 21,

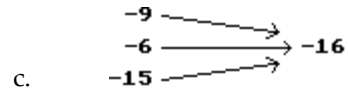
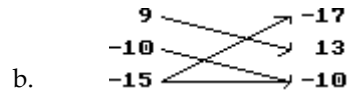
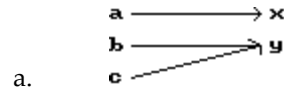
16) Determine if the following is a function or not.

a. The set of ordered pairs
 $\{(12, 17), (16, 21), (17, 22), (18, 27)\}$
 in the set of whole numbers.

b. The set of ordered pairs
 $\{(5, 10), (9, 14), (9, 15), (11, 16)\}$
 in the set of whole numbers.

17) Given the function $f(x) = 5x - 1$ and a domain of $\{-2, -1, 0, 1, 2\}$. Illustrate the function using a set and arrow diagram.

18) Determine whether the relation is a function.



d.

x	-8	-8	2	5	9
y	2	1	4	-6	-1

19) A private message agency charges 65 cents for the first ounce and 30 cents for each additional ounce or fraction of an ounce to send a message across town.

a. Write an equation modeling the price to send a message that weighs x ounces.

Simplify completely.

b. How much does it cost to send a message weighing 4.5 ounces?

20) Given: $f(x) = 2x + 3$ and $h(x) = 5 - x$

SIMPLIFY COMPLETELY

SHOW ALL WORK

- $f(-7)$
- $h(k + 1)$
- $(h \circ f)(2)$
- $(f \circ h)(-2t)$
- For what value of x does $f(x) = -23$?

21) Given: $f(x) = x + 10$, $g(x) = x^2$, $h(x) = 3x - 2$

SIMPLIFY COMPLETELY

SHOW ALL WORK

- $f(-3)$
- $g(2k)$
- $h(k + 2)$
- $(f \circ h)(2t)$
- $(g \circ f)(-1)$
- For what value of x does $h(x) = 43$?

- 22) All items in an ice cream truck cost \$0.93 per item.
- Fill in the chart with the correct response for the total cost $C(x)$ if x items are purchased.
 - Write the linear function which gives $C(x)$.

x	$C(x)$
0	
1	
2	
3	

- 23) Tell whether each of the following is reflexive, symmetric, or transitive. Which are equivalence relations?
- "is equal to"
 - "Is married to"

Answer Key

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- 1) a. $2x$
b. $x - 8$
c. $5x + 2$
- 2) a. $x + (x + 1) = 2x + 1$
b. $3 + 2n$
c. $5x - 3$
- 3) a. $2n + 8$
b. $2.50 + .50n$
c. $x + (x + 2) = 2x + 2$
d. $4s + 3000$
e. Derek: $d - 26$; Mark: $\frac{d}{2} + 26$
- 4) a. $x = 21$
b. $x = 9$
c. $x = -2$
d. $x = -2$
e. $x = 7$
f. $y = -21$
g. $x = -6$
h. $x = -7$
i. $x = -6$
- 5) 2 magazines
- 6) x
 $x + 4$
 $6(x + 4) = 6x + 4240$
 $(6x + 424) - 9 = 6x + 15$
 $\frac{6x + 15}{3} = 2x + 5$
 $(2x + 5) - 5 = 2x$
The answer is always 2 times the number the student originally picked.
- 7) x
 $x - 5$
 $10(x - 5) = 10x - 50$
 $(10x - 50) + 16 = 10x - 34$
 $\frac{10x - 34}{2} = 5x - 17$
 $(5x - 17) + 17 = 5x$
The answer is always 5 times the number the student originally picked.
- 8) \$4.15
9) \$2.75
10) \$1.65
11) 57 wagons
16 tricycles
12) 10-10 cent stamps and 10-5 cent stamps
13) 11 tickets
14) Multiply the input number by 3.
15) $f(n) = 4n + 5$
- 16) a. Yes
b. No
- 17) Image not available
- 18) a. Function
b. Not a Function
c. Function
d. Not a Function
- 19) a. $C(x) = .35 + .30x$
b. \$1.70
- 20) a. -11
b. $4 - k$
c. -2
d. $4t + 13$
e. -13
- 21) a. 7
b. $4k^2$
c. $3k + 4$
d. $6t + 8$
e. 81
f. $x = 15$
- 22) a. \$0; \$0.93; \$1.86; \$2.79
b. $C(x) = 0.93x$
- 23) a. reflexive, symmetric, transitive, equivalence relation
b. symmetric