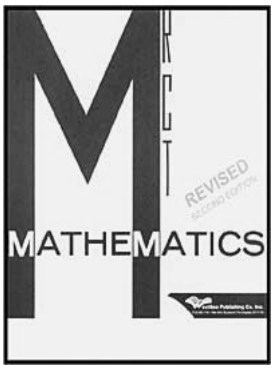


Algebra 1 RCT Preparation
OHS Day, May 24, 2007
Beirne Library
Mr. Bagnuolo

Name: _____

Use this guide for today's review and for independent practice in the days ahead. For this review, we will be following the January 27, 1994 RCT Exam

Part A

Hints:

1. Add

2. Use this chart to help:

Ten Thousands	One Thousands	Hundreds	Tens	Ones

3. Divide the money Hannah has by the cost of each token. She can only by whole tokens – no decimals.

4. Hint: You cannot get a negative number as an answer unless there is a negative number in the original problem. For subtraction problems in Section A, you will generally get a positive answer. If you get a negative answer, carefully check to see whether one of the numbers is a negative. If it is not, take away the negative sign.

5. Multiply

6. Add the increase in the number of people at the second match to the number of people in the first match.

NOTE: Never put a comma in the calculator on this exam. Never!

7. If you get a weird number, you divided backwards!

8. Count the number of inches of snow in February and count the number of inches of snow that fell in December. Then subtract the two. The "difference" between the numbers is the answer.

9. Median = the middle. But first you have to put them in order!

NOTE: Median always has to be put in order first!

10. Mean = the average. There are five test scores here. Add them up and then divide by five.

11. Substitute! $y + 2x$ $y = 3, x = 2$

    so: $3 + 2(2) =$

    Do the multiplication first and then add.

12. Hint: Twelve goes into both numbers!

13. The denominator is the bottom number. Which of these numbers is divisible (can be divided by) by 2, 5, and 8?

    10, 20, 30, or 40?

14. Add them up, but make sure you include the decimal point!

NOTE: Carefully check your calculator to include the decimal point in your answer, if needed.

15. This is an area question. Use this formula for area of a triangle:
    $A = (.5)bh$ in other words: $A = (.5)(8)(10)$

NOTE: You need to know basic area formulas:

Area for any four-sided figure:	A = length x width
Area for any three-sided figure:	A = .5 times the two legs (bh)
Area for a circle:	A = (pi)(radius^2)

16. Add them together like this: 24 + -74
You may get a negative number since you are working with integers.

17. Use this chart to help. Since you are rounding to the nearest *tenth* you need to check the *hundredths* place.

Tens	Ones	Decimal	Tenths	Hundredths	Thousandths
5	6	.	8	8	7

If the *hundredths* place is $\geq$ 5 then you round the *tenths* place up and drop off everything that follows.

If the *hundredths* place is < 5 then you leave the *tenths* place as it is and drop off the remaining numbers.

Your answer will either be: 56.8 or 56.9.

18. Every triangle has three angles. Those three angles *always equal 180˚*. So, add the two angles that you have and subtract that total from 180˚. That will give you the measurement of the missing angle.

NOTE: The sum of the angles of any triangle is 180˚

19. First, you have to use the distributive property to simplify the expression:

3(x + 5) = 27

→ 3x + 15 = 27 Now, subtract 15 from each side
Then divide both sides by 3

20. Change the fraction to a decimal:

2/5 -> decimal: divide the numerator (top) by the denominator.
now, multiply that decimal by 40.

That's your answer. End of Part A

Part B

21. Pictograph! If each image equals 1,000
one-half and image will equal 500

22. Trapezoid, pentagon, rectangle, square, triangle, hexagon, octagon….doesn't matter! If it's ***perimeter*** just add up the sides!

23. In most division problems, if you are unsure what to do, divide the larger number by the smaller number.

In this case, the family needs to save $6600 over 12 years. How much do they need to save each year so that at the end of 12 years they have $6600?

24. ``Writing a check out" (as in out of the account) is a withdrawal.

25. In probability, remember to add up all the items before figuring out the fraction to use.

26. Exponents and powers:
x^2 means x • x
x^3 means x • x • x
x^4 means x • x • x • x

So, 2^3 =

27. Use the chart to help:
Which number is in the hundredth place in the number 9.0248?

Tens	Ones	Decimal	Tenths	Hundredths	Thousandths

28. When two fractions are connected by an equal sign, it is called a proportion.

To solve the problem, cross multiply, then solve for *x.*

So, 12/x = 2/3

Cross multiply and you get: 36 = 2x

What does *x* have to be so that when you multiply it by 2, you get the answer of 36?

Since it is multiple choice, try the answers one by one.

NOTE: You can only cross-multiply fractions when there is an equal sign between the two!

29. Divide 408 by 7. Write down the whole number.
Multiply your answer by 7. Write down the answer.
Subtract your answer from 408. What's left is the remainder.

30. Original price: $460
Down payment: - $85
What's left to pay?

Take what is left to pay and then divide it by how much she will pay each month ($75). This will tell you how many months she will need to pay it off.

31. To find the equivalent (equal) of a fraction in its decimal form, one way is to divide the numerator (top) by the denominator.

32. Adding time: Remember each hour is 60 minutes.

Leave at	8:45 A.M.
Travel for 2 hours and 25 minutes	+ 2:25
Totals	10:70

So, 10 hours + 70 minutes.
70 minutes is one hour and 10 minutes.
Add that to 10:00 A.M.

	10:00 A.M.
+	1:10 minutes
Arrival Time:	

33. The simple solution is to divide 100% by the % of each ingredient. That will tell you how many servings you would need to get 100% of the Recommended Daily Allowance (RDA). Use this chart to help: (The first one is figured out to show you how it's done.)

PERCENTAGE OF U.S. RDA in ONE SERVING			
		100% ÷ =	# of Servings
Protein	***4%***	***100% ÷ 4% =***	***25 Servings***
Vitamin A	20%		
Vitamin C	0%		
Iron	10%		
Vitamin B	25%		

34. Think of a number line:
The bigger a negative number – the smaller it is.
The bigger a positive number – the bigger it is.

35. Think of your tests. This is a fraction. 18/20. To change that into a percent, divide the numerator by the denominator and multiply it by 100.

NOTE: $\frac{\text{numerator}}{\text{denominator}}$ $\frac{a}{b}$

36. This is a matter of reading the graph, just like in question #8.

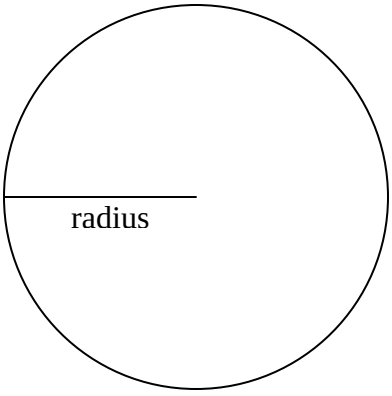
- What was the temperature at 6:00 A.M.? _____
- What was the temperature at 3:00 P.M.? _____
- What is the difference between the two temperatures?
- That's how much the temperature rose.

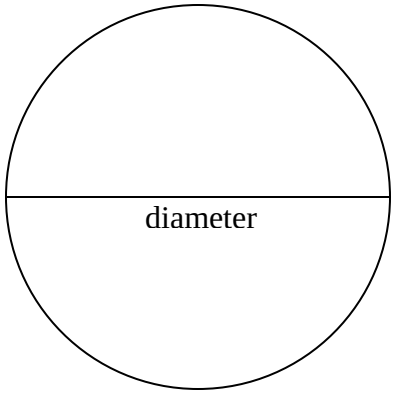
37. If you made a call for six minutes and the first three minutes cost you $2.00, you still have 3 minutes left to pay for. According to the question, each of the 3 remaining minutes costs $.40.

So, you will have to pay $2.00 + 3(.40) = _____

38. A radius is equal to ½ of the diameter.
A diameter is equal to 2x the radius.

So, if the radius is 8cm, how long is the diameter?





39. A factor is one of the multiples of a number. For example, the factors of 20 are {1, 2, 4, 5, 10, 20}, because 20 can be divided by ***all*** those numbers.

20 ÷ 1 = 20
20 ÷ 2 = 10
20 ÷ 4 = 5
20 ÷ 5 = 4
20 ÷ 10 = 2
20 ÷ 20 = 1

Pick the answer that contains all multiples of 45.

45 ÷ 1 = 45
45 ÷ 3 = 15
45 ÷ 5 = 9
45 ÷ 9 = 5
45 ÷ 15 = 3
45 ÷ 45 = 1

40. Percentages: 6% of $20.00 = ?
.06 x $20.00 = $1.60

Same process for this questions: 8% of $20.00

NOTE: To change a percent to a decimal, cross off the percent sign and move the decimal two places to the left:

1% = .01	4% = .04	7% = .07	10% = .10	100% = 1.00
2% = .02	5% = .05	8% = .08	20% = .20	
3% = .03	6% = .06	9% = .09	99% = .99	

NOTE: "of" means "multiply"

41. Points are always read *x* first and then *y* next. (x, y)

42. Figure it out. Two bags of chips cost 59¢ each. How much change will you get from a $10.00 bill.

43. Another percentage problem:
15% of $1950 =

44. More percentages. Break down the pie chart like this:

Movies - 20% of $20.00 =
School Lunches - 40% of $20.00 =
Clothes - 30% 0f $20.00 =
Supplies - 10% of $20.00 =

45. There are a few ways to do this. This is what's called an improper fraction, because the numerator is greater than the denominator. If you divide the numerator by the denominator you get 1 with 5 left over (left over 12). Does that help?

NOTE: Changing a mixed number to an improper fraction:

NOTE: Changing an improper fraction to a mixed number

46. Best way to do a problem like this is to line them all up:

0.25
0.025
0.225
0.02525

If you want, you can add zeroes on the end to even it all out:

0.25000
0.02500
0.22500
0.02525

Which one is larger?

47. Another percent!

What is 20% of 70?

Just like the other questions:

48. Eight cans cost $2.38. Find the cost of one can by dividing the cost for 8 by 8. In other words, $2.38 / 8 = the cost of one can. Then place it in the chart to help you round it off to the nearest penny (hundredths).

Use this chart to help: (hundredths is the nearest cent)

Decimal	Tenths	Hundredths	Thousandths
.			

49. Eliminate (3) and (4). You can't subtract 6 from 29 and get 35.
You then need to borrow "1" from 29, since you can't subtract 7/8 from 5/8, without getting a negative number.

So you borrow "1" from 29, leaving behind 28.
You add the "1" you just borrowed to 5/8, like this: 8/8 + 5/8 = 13/8
Now, you subtract 6 7/8 from 28 13/8. The answer is….

50. Area equals length x width. Your answer will be in m^2

51. Use your calculator.

52. First, write it out here:

2 more than a number is
(more than means +; is means =)

53. If you know about model planes or cars, you know about this. If the ratio of a model to the real thing is 1 to 187, it means that the real thing is 187 times bigger than the model. Does that help?

54. Approximation means “about.” Take the square root of 85 on your calculator and choose the answer that is the closest. ($\sqrt{85}$ =)

55. This is another percent question, but this time you have to find out how much is “off” and then subtract that from the original price.

So, 10% of $135.60 =
.10 x 135.60 = _____

Then subtract the percent off from the original price.

56. Circumference of a circle is found using the formula:
C = 2•π•r
First, divide the diameter in half to get the radius.
Now,
C = 2•π•r
C = 2•π•radius

Leave you answer in terms of π

57. Divide by 1,000

58. If the chances of winning are 4 out of 5, what are the chances of losing?

59. How many sections are there? How many are shaded?

60. < = less than ≤ = less than or equal to
open circle – does not include the number
closed circle – includes the number.

All done!

More Notes:

a) Commas: thousands, millions
b) Decimal: and
c) Addition: plus, sum, together, in addition to, more than…
d) Subtraction: difference, minus, left, less
e) Subtracted from: 10 subtracted from 100 means -10 +100
f) Multiplication: product, times
g) Division: divisible, quotient
h) Others: