

RCT EXAM

MATH

TUESDAY, JANUARY 27<sup>TH</sup>

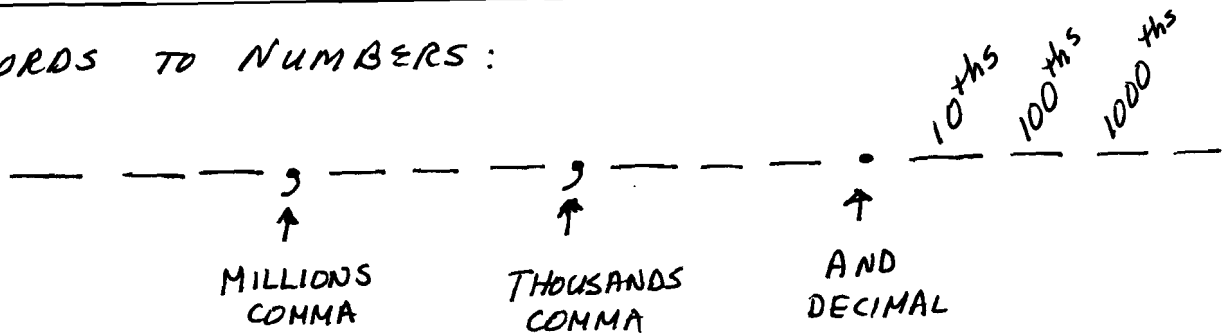
3<sup>RD</sup> FLOOR MAIN

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12:00 NOON

REVIEW FOR 2004 JUNE RCT

1.) WORDS TO NUMBERS:



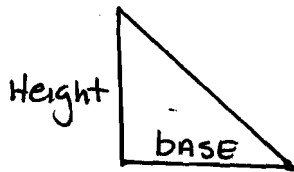
2.) QUESTIONS 1 - 20 : NO NEGATIVE ANSWERS FOR SUBTRACTION.

3.) DOWN PAYMENT IS SUBTRACTED FROM THE ORIGINAL COST. (#7)

4.) EXAMPLES OF DIVISION:

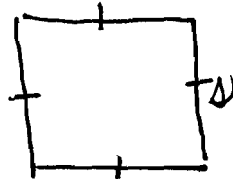
$$\frac{350}{50} \quad 50 \overline{) 350} \quad 50 \overline{) 350}$$

5.) AREA:



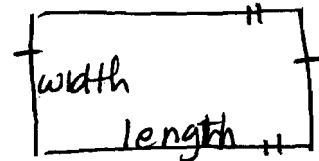
$$A = \frac{1}{2} \text{ base} \times \text{height}$$

SQUARE

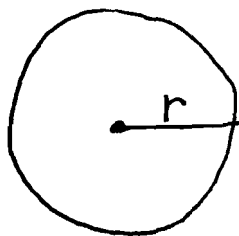


$$A = s \cdot s$$

RECTANGLE



$$A = l \times w$$



$r = \text{radius}$   
 $r$  is  $\frac{1}{2}$  diameter

$$A = \pi r^2$$

All answers  
in square  
units  
 $\text{ft}^2$   $\text{yd}^2$   $\text{in}^2$

6.) PERIMETER = SUM (ADD) ALL THE SIDES

7.) MEAN (AVERAGE) = Ex. TEST GRADES

FOUR TEST SCORES: 90, 85, 80, 85

• ADD THEM UP:  $90 + 85 + 80 + 85 = 340$

• DIVIDE BY # OF TESTS:  $340 \div 4 = 85$

• 85 = AVERAGE

8.) MEDIAN: = MIDDLE NUMBER IN A SERIES

★ FIRST PUT THE NUMBERS IN ORDER AND THEN PICK THE MIDDLE NUMBER.

Ex: 6, 13, (19), 21, 27

9.) MODE: = THE NUMBER THAT APPEARS THE MOST IN A SERIES.

Ex: 2, 3, 4, 3, 5, 3, 7 (3) = MODE

10.) FINDING THE VALUE OF A VARIABLE. (#14)

Solve for  $p$ :  $7p - 3 = 18$

GUESS + CHECK

$$7(5) - 3 = 18; \quad 32 = 18 \quad \times$$

$$7(1) - 3 = 18; \quad 4 = 18 \quad \times$$

$$7(3) - 3 = 18; \quad 18 = 18 \quad \checkmark$$

$$p = 3$$

ALGEBRA WAY

$$\begin{array}{r} 7p - 3 = 18 \\ + \quad +3 \quad +3 \\ \hline \end{array}$$

$$\begin{array}{r} 7p = 21 \\ \hline 7 \end{array}$$

$$p = 3$$

11.) REDUCE TO LOWEST TERMS: (# 15)

$$\frac{48 \div 2 = 24 \div 6 = 4}{60 \div 2 = 30 \div 6 = 5} = \frac{4}{5}$$

KEEP GOING UNTIL YOU CAN GO NO MORE

12.) PROBABILITY: # 18

$$\frac{3}{10} \quad \text{SOMETHING WILL HAPPEN}$$

$$\frac{7}{10} \quad \text{SOMETHING WON'T HAPPEN}$$

13.) FRACTIONS TO REMEMBER:

$$\frac{1}{2} = .50$$

$$\frac{2}{2} = 1.00$$

$$\frac{1}{4} = .25$$

$$\frac{2}{4} = .50$$

$$\frac{3}{4} = .75$$

$$\frac{4}{4} = 1.00$$

$$\frac{1}{5} = .20$$

$$\frac{2}{5} = .40$$

$$\frac{3}{5} = .60$$

$$\frac{4}{5} = .80$$

$$\frac{5}{5} = 1.00$$

14.) CHANGING A MIXED NUMBER TO AN IMPROPER FRACTION (# 24)

$$2 \frac{7}{9} \rightarrow 2 \frac{7}{9} = \frac{25}{9}$$

\* DENOMINATOR STAYS THE SAME

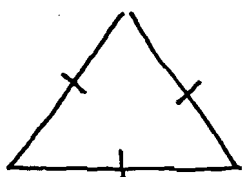
15.) REMAINDER IN DIVISION (# 27)

$$\begin{array}{r} 386 \\ 4 \overline{) 145} \\ \underline{-12} \phantom{0} \\ 25 \\ \underline{-24} \\ 1 \end{array}$$

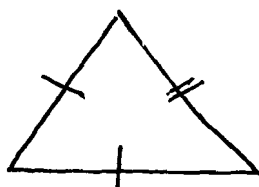
36 R 1

REMAINDER (LEFT OVER)  
= 1

16.) TRIANGLES: (# 28)



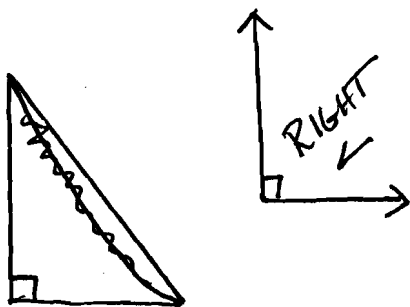
EQUILATERAL  
(ALL SIDES EQUAL)



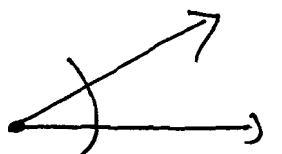
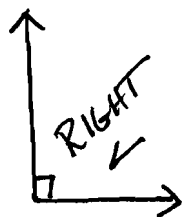
ISOSCELES  
(TWO SIDES EQUAL)



SCALENE  
(NO SIDES EQUAL)



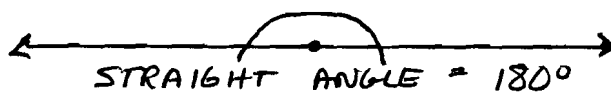
RIGHT TRIANGLE  
90°



ACUTE  $\angle$   
> 90°



OBTUSE  $\angle$   
< 90°



STRAIGHT ANGLE = 180°

17.) KNOW THESE SQUARES AND SQUARE ROOTS: (# 30)

$1^2 = 1$

$\sqrt{1} = 1$

$2^2 = 4$

$\sqrt{4} = 2$

$3^2 = 9$

$\sqrt{9} = 3$

$4^2 = 16$

$\sqrt{16} = 4$

$5^2 = 25$

$\sqrt{25} = 5$

$6^2 = 36$

$\sqrt{36} = 6$

$7^2 = 49$

$\sqrt{49} = 7$

$8^2 = 64$

$\sqrt{64} = 8$

$9^2 = 81$

$\sqrt{81} = 9$

$10^2 = 100$

$\sqrt{100} = 10$

$11^2 = 121$

$\sqrt{121} = 11$

$12^2 = 144$

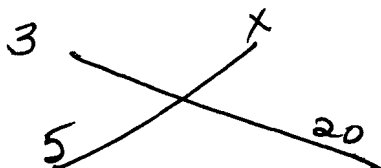
$\sqrt{144} = 12$

18.) PROPORTIONS: SOLVING (# 32)

$\frac{3}{5} = \frac{x}{20}$

CROSS  
MULTIPLY

$60 = 5x$



$\frac{60}{5} = \frac{5x}{5}$

$12 = x$

19.) LEAST COMMON MULTIPLE OF 2, 4, 5

3 → 2, 4, 6, 8, 10, 12, 14, 16, 18, (20)

2 → 4, 8, 12, 16, (20) (STOP WHEN YOU HAVE A MATCH)

1 → 5, 10, 15, (20), 25 (5 numbers)

\* SAME FOR LEAST COMMON DENOMINATOR (# 34)

20.) PRIME NUMBERS : KNOW THESE :

1, 2, 3, 5, 7, 11, 13, 17, 19, 23, 29,

31, 37, 41, 43, 47.

PRIME NUMBERS CAN ONLY BE DIVIDED BY  
THEMSELVES AND 1. (# 35)

21.) CHECKING ACCOUNT PROBLEMS:

BALANCE : WHERE YOU BEGIN, WHAT YOU HAVE

DEPOSITS : ADD

CHECKS & WITHDRAWALS : SUBTRACT (# 36)

22.) CHANGE % TO A DECIMAL :

(# 38)

MOVE DECIMAL 2 PLACES LEFT

3% = .03      35% = .35

10% = .10      41% = .41

OR :

DIVIDE THE  
NUMBER BY 100

$16\% = \frac{16}{100} = .16$

23) PERCENT PROBLEMS: COMMISSIONS, SALES TAX  
DISCOUNTS, TIPS

20% OFF \$100  
 $.20 \times 100 = \$20$

15% COMMISSION  
 $.15 \times \underline{\hspace{2cm}} =$

24) CUBES:  $3^3 = 3 \cdot 3 \cdot 3 = 27$

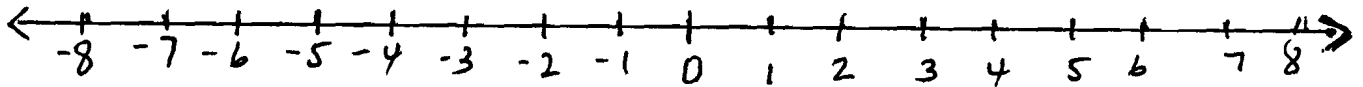
(Power of 3)  $5^3 = 5 \cdot 5 \cdot 5 = 125$

(#39)

25) KNOW THE NUMBER LINE:

LESS ←

→ MORE



(#44)

26) KNOW THESE WORDS:

PRODUCT: MULTIPLY, TIMES, FACTORS

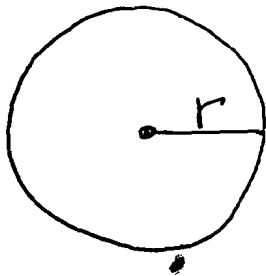
SUM: ADD, TOTAL, ALL, MORE

SUBTRACT: MINUS, DIFFERENCE, LESS,

DIVIDE: QUOTIENT

(#46)

27.) CIRCUMFERENCE = DISTANCE AROUND



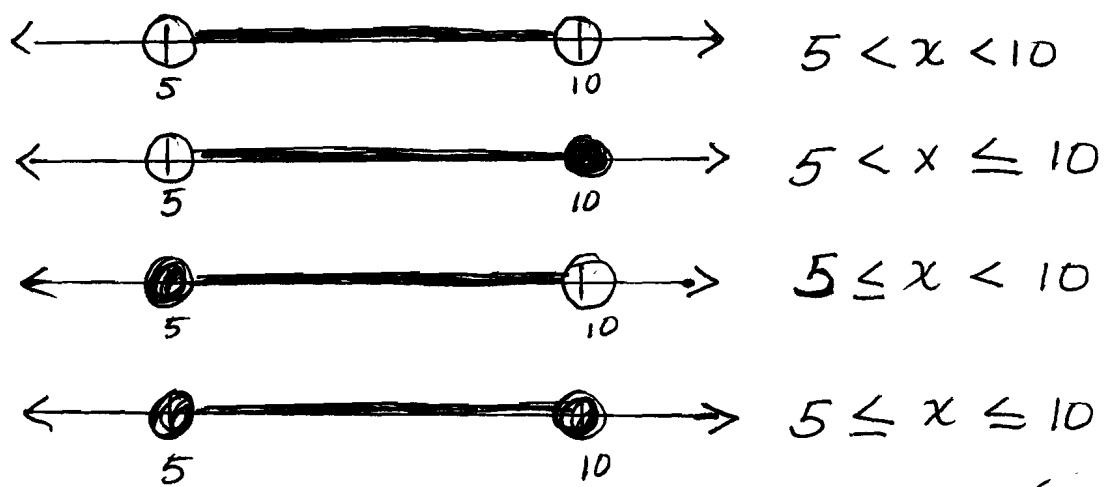
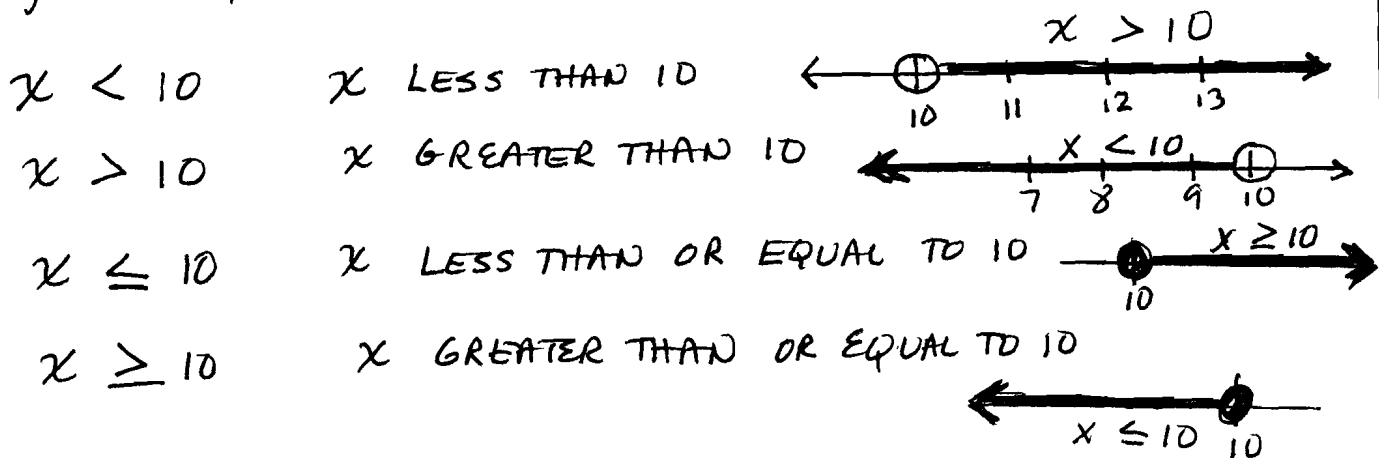
FORMULA:

$C = 2\pi r$

(#48)

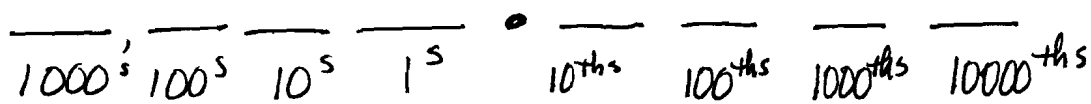


### 28.) INEQUALITIES



(# 51)

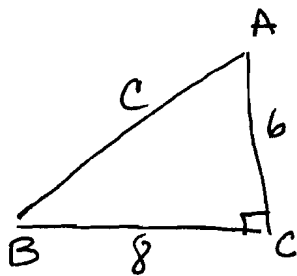
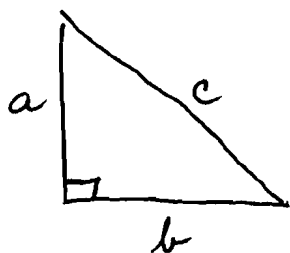
### 29.) NUMBER + PLACE VALUE (DECIMALS)



(# 53)

### 30.) PYTHAGOREAN THEOREM

$$a^2 + b^2 = c^2$$



$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 6^2 + 8^2 &= c^2 \\
 36 + 64 &= c^2 \\
 100 &= c^2 \\
 \sqrt{100} &= \sqrt{c^2} \\
 10 &= c
 \end{aligned}$$

#56

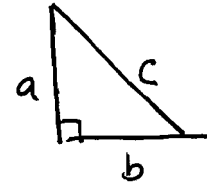
## 31) SIDE VALUES FOR RIGHT TRIANGLES

$$\begin{array}{l} \text{if} \\ a + b = c \end{array}$$

$$\underline{3 + 4 = 5}$$

$$\underline{6 + 8 = 10}$$

$$\underline{12 + 16 = 20}$$



😊  
Simple!

# 56

32) TIME QUESTIONS

1 DAY = 24 hours

1 hour = 60 minutes

1 minute = 60 seconds

1 week = 7 days

EX: START @ 9:45 A.M.

END @ 2:15 P.M.

How LONG

$$9:45 - 10:45 = 1 \text{ hr.}$$

$$10:45 - 11:45 = 1 \text{ hr.}$$

$$11:45 - 12:45 = 1 \text{ hr.}$$

$$12:45 - 1:45 = 1 \text{ hr.}$$

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 4 hrs

$$1:45 - 2:15 = 30 \text{ min}$$

4 hrs

+ 30 min

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 4 hrs + 30 min

4½ hrs

(58)

Answers RCT Math June 2004

- |     |                 |     |   |     |   |
|-----|-----------------|-----|---|-----|---|
| 1.  | 5,092           | 28. | 4 | 55. | 3 |
| 2.  | 2,097           | 29. | 3 | 56. | 2 |
| 3.  | $\frac{2}{5}$   | 30. | 1 | 57. | 4 |
| 4.  | 6               | 31. | 2 | 58. | 4 |
| 5.  | 1,124           | 32. | 2 | 59. | 4 |
| 6.  | 16.6            | 33. | 3 | 60. | 1 |
| 7.  | 5 months        | 34. | 3 |     |   |
| 8.  | 17,192          | 35. | 1 |     |   |
| 9.  | 32 cm           | 36. | 3 |     |   |
| 10. | -6              | 37. | 3 |     |   |
| 11. | 8               | 38. | 2 |     |   |
| 12. | 1.3             | 39. | 4 |     |   |
| 13. | 78              | 40. | 2 |     |   |
| 14. | $p=3$           | 41. | 2 |     |   |
| 15. | $\frac{4}{5}$   | 42. | 4 |     |   |
| 16. | $\frac{19}{24}$ | 43. | 2 |     |   |
| 17. | 30 cm           | 44. | 3 |     |   |
| 18. | $\frac{7}{10}$  | 45. | 1 |     |   |
| 19. | $5\frac{4}{5}$  | 46. | 3 |     |   |
| 20. | 28              | 47. | 2 |     |   |
| 21. | 3               | 48. | 3 |     |   |
| 22. | 4               | 49. | 2 |     |   |
| 23. | 1               | 50. | 4 |     |   |
| 24. | 1               | 51. | 1 |     |   |
| 25. | 3               | 52. | 1 |     |   |
| 26. | 2               | 53. | 4 |     |   |
| 27. | 1               | 54. | 1 |     |   |