ASVAB MATH PREPARATION

1. FIRST - Use this preparation worksheet to help find weaknesses in Math, then study the parts of Math where the weakness were found. After studying, take the test again. First - take each quiz, 1 – 8. Second - correct your responses with the correct answers on page 5. Third - if you get less than 75% on a specific quiz go to the QUIZ HELP pages from 6 – 13 and review the topic for that QUIZ.

2. SECOND - After reviewing Math weaknesses go to www.uniontestprep.com/asvab/practice-test. Work on Math Knowledge (computations) then do Arithmatic Reasoning (word problems).

Breaking Down the CAT/ Paper ASVAB Sub-Tests

10 SUBTESTS	MINUTES	QUESTIONS	DESCRIPTION
General Science (GS)	8 min/ques **11**	16 **25**	Measures knowledge of life science, earth and space science, and physical science.
Arithmetic Reasoning (AR)	39 2.4 **36 1.2**	16 **1.15 pt/q 18.4** **30 .65 pt/q 19.5**	Measures ability to solve basic math problems.
Word Knowledge (WK)	8 .5 **11 .3**	16 **2.3 pt/q 36.8** **35 1.3 pt/q 45.5**	Measures ability to understand the meaning of words through synonyms.
Paragraph Comprehension (PC)	22 2 **13 .87**	11 **2.3 pt/q 25.3** **15 1.3 pt/q 19.5**	Measures ability to obtain information from written materials.
Mathematics Knowledge (MK)	18 1.13 **24 .96**	16 **1.15 pt/q 18.4** **25 .65 pt/q 16.25**	Measures knowledge of mathematical concepts and applications.
Electronics Information (EI)	8 **9**	16 **20**	Measures knowledge of electrical current, circuits, devices, and electronic systems.
Auto Information (AI)	6 **6**	11 **13**	Measures knowledge of automotive maintenance and repair.
Shop Information (SI)	5 **5**	11 **12**	Measures knowledge of wood and metal shop practices.
Mechanical Comprehension (MC)	20 **19**	16 **25**	Measures knowledge of the principles of mechanical devices, structural support, and properties of materials.
Assembling Objects (AO)	12 **15**	16 **25**	Measures spatial & problem solving activities.
TOTAL	146 **149**	145 **225**	

GREEN = PAPER TEST

Math –	57	32	**1.15 points per question**
	60	**55**	**.65 points per question**
English -	30	27	**2.3 points per question**
	24	**50**	**1.3 points per question**

Quiz 1

1. 18–5 (2+3) = _____
2. (2×3×4)÷(10-6)= _____
3. 2(2-1) + 3(3-1) = _____
4. 468 ÷ 18 = _____

Quiz 2

1. + = _____
2. 5 +2 = _____
3. + = _____
4. 9 – 6 = _____
5. – = _____

Which is bigger?

6. or _____
7. or _____
8. – or - _____

Multiply

9. × = _____
10. × = _____
11. $\frac{15}{16}$ × = _____

Divide

12. ÷ = _____
13. ÷ = _____

QUIZ 3

1. 2.5 × 2.5 = _____
2. 1104 ÷ 9.2 = _____
3. 6.92 ÷ 17.3 = _____
4. 7.74 ÷ 0.43 = _____
5. $\frac{4}{16}$ = ___% = 0.___
6. 0.33 = ___% = $\overline{\quad}$
7. 50% = $\overline{\quad}$ = 0.___

Quiz 4

1. 135.7 × 10 = _____
2. .314 × 100 = _____
3. 58.47 ÷ 100 = _____
4. 1.76 ÷ 10 = _____
5. Round 9.66 to nearest whole number ____
6. Round 12.12 to nearest tenth _____
7. 5^2 = _____
8. 3^3 = _____
9. $2^2 \times 2^3$ = ____
10. $7^4 \div 7^2$ = _____

Quiz 5

1. In a bowl there are 5 red sticks, 4 blue sticks, 7 yellow sticks, and 9 white sticks. If 1 stick is to be drawn at random, what is the probability it will be red?
    a. $^1/_{10}$
    b. $^1/_5$
    c. $^5/_{10}$
    d. $^5/_{12}$
2. A store owner buys a pound of grapes for 80 cents and sells it for a dollar. What percent of the original price of grapes is the store owner's profit?
    a. 10%
    b. 20%
    c. 25%
    d. 40%
3. Curtis earns $600 every month except for December and January, when he takes a vacation and earns no income. What is his average monthly income for the entire year?
    a. $500
    b. $484
    c. $300
    d. $275

Quiz 6

1. $11x + 4 = -x + 16$ _____
2. $3(x+2) = 4(2+x)$ _____
3. Factor: $x^2 - 4x - 21$ _____
4. Factor : $X^2 + 10X + 25$ _____

Quiz 7

1. $-9m-12 > 11 - 3m$ _____
2. $10 + X < 14 - 3X$ _____
3. $5!$ = _____

4. If Bonzo rode his bike 30 miles in 5 hours, how long would it take him to ride 12 miles at the same rate?
    a. 2 hours
    b. 2.5 hours
    c. 5 hours
    d. 12 hours
5. If Jen puts $1000 in a savings account with an annual interest rate of 5%, how much interest will she earn in two years?
    a. $50
    b. $75
    c. $100
    d. $150
6. Rob drove for 6.5 hours at 45 miles per hour. How far did he travel?
    a. 153 miles
    b. 292.5 miles
    c. 300 miles
    d. 330.5

Quiz 8

1. A circular swimming pool has a circumference of 9π. What is the diameter of the pool?
    a. 3
    b. 9
    c. 6
    d. 24
2. One of the angles in a right triangle measures 20 degrees, what are the measurements of the other 2 angles?
    a. 20 degrees, 140 degrees
    b. 40 degrees, 140 degrees
    c. 70 degrees, 90 degrees
    d. 90 degrees, 80 degrees
3. A line crosses 2 parellel lines, creating angle a, which measures 50 degrees. How many degrees does angle b have?
    a. 50 degrees
    b. 90 degrees
    c. 130 degrees
    d. 180 degrees
4. Mrs . Smith baked 2 apple pies. One had a radius of 4 inches, the other had a

radius of 5 inches. Fine the difference in the areas of the two pies.
   a. 1 square inch
   b. 9 square inches
   c. 9π square inches
   d. 4π square inches

5. If a triangle has an area of 21 and a base of 7, what is the height?
   a. 4
   b. 6
   c. 7
   d. 8
6. The length of a rectangle is 2 less than 3 times the width. If the perimeter is 20mm what is the length?
   a. 3mm
   b. 7mm
   c. 9mm
   d. 11mm

7. A box has a length of 5 inches, width of 3 inches, and height of 4 inches. What is the volumn of the box?
   a. 12 cu inches
   b. 60 cu inches
   c. 120 cu inches
   d. 600 cu inches

8. What is the surface area of a cube with a volume of 27 cu inches?
   a. 18 sq inches
   b. 27 sq inches
   c. 54 sq inches
   d. 81 sq inches
9. The perimeter of a triangle is 25 inches. If two of the sides are 8 and 10 inches, what is the length of the third side?
   a. 5 inches
   b. 7 inches
   c. 12 inches
   d. 18 inches

ANSWERS

Quiz 1 **(order of operation)**

1. -7
2. 6
3. 8
4. 26

Quiz 2 **(fractions)**

1. = 1
2. 7
3.
4. 3
5. $\frac{15}{54}\frac{15}{54} = \frac{5}{18}\frac{5}{18}$
6. $\frac{9}{10}\frac{9}{10}$
7. $\frac{4}{25}\frac{4}{25}$
8. $-\frac{1}{100}\frac{1}{100}$
9. $\frac{6}{12}\frac{6}{12} = \frac{1}{2}\frac{1}{2}$
10. $\frac{1}{32}\frac{1}{32}$
11. $\frac{15}{32}\frac{15}{32}$
12. $1\frac{2}{6}\frac{2}{6} = 1\frac{1}{3}\frac{1}{3}$
13. $\frac{60}{42}\frac{60}{42} = 1\frac{18}{42}\frac{18}{42} = 1\frac{3}{7}\frac{3}{7}$

Quiz 3 **(decimals and percents)**

1. 6.25
2. 120
3. .4
4. 18
5. $\frac{4}{16}\frac{4}{16}$ = 25% = 0.25
6. 0.33 = 33% = $\frac{1}{3}\frac{1}{3}$
7. 50% = $\frac{1}{2}\frac{1}{2}$ = 0.50

Quiz 4 **(Exponents)**

1. 1357
2. 31.4
3. 0.5847
4. 0.176
5. 10
6. 12.1
7. 25
8. 27
9. 4 X 8 = 32
10. 2401 ÷ 49 = 49 ($7^4 \div 7^2 = 7^2$)

Quiz 5 **(Changes in percents and averages)**

1. B
2. B
3. A

Quiz 6 **(Algebra and binomials)**

1. 12x = 12 x = 1
2. 3x + 6 = 8 + 4x x=-2
3. (x-7) (x+3)
4. (a+5) (a+5)

Quiz 7 **(Inequalities and special formulas)**

1. -6m > 23
   $m < -\frac{23}{6}\frac{23}{6}$
2. 4x < 4
   X < 1
3. 2x > 6
   X > 3
4. A
5. C
6. B

Quiz 8 **(Geometry)**

1. B
2. C
3. C
4. C
5. B
6. B
7. B
8. C

9. B

QUIZ 1 (Order of operation)

Parentheses	**PLEASE**
Exponents	**EXCUSE**
Multiplication	**MY**
Division	**DEAR**
Addition	**AUNT**
Subtraction	**SALLY**

10 – (6-5) – 2(3+3) + 3 =
10 – (1) -2(6) + 3 =
10 – (1) – 12 + 3 =
9 – 12 + 3 =
-3 + 3 = 0

QUIZ 2 (Fractions)

ADDING AND SUBTRACTING FRACTIONS: To add and subtract fractions the bottom number must be the same. If they are different, find a common number that can be divided by both numbers ($\frac{1}{3}+\frac{1}{4}=\frac{4}{12}+\frac{3}{12}$ $\frac{1}{3}+\frac{1}{4}=\frac{4}{12}+\frac{3}{12}$). Multiply the bottom number to get a common number and what you multiply the bottom you also multiply the top by the same number. Then just add or subtract the top number and the bottom number remains the same.

$$(\frac{1}{3}+\frac{1}{4}=\frac{4}{12}+\frac{3}{12}\ \frac{1}{3}+\frac{1}{4}=\frac{4}{12}+\frac{3}{12}=\frac{7}{12}\ \frac{7}{12})$$

ADDING AND SUBTRACTING MIXED NUMBERS: Add/subtract the whole numbers and then add/subtract the fractions.

REDUCING FRACTIONS. When reducing fractions, always use the same number to divide both the top and bottom. Try using small numbers like 2, 3, and 5.

COMPARING FRACTIONS: To compare fractions change them so the bottom number is the same number and then compare the top number.

MULTIPLYING FRACTIONS: To multiply fractions, multiply the top numbers (numerators) and then multiply the bottom numbers (denominators).

$$\frac{4}{5}\ \frac{4}{5} \times \frac{22}{3}\ \frac{22}{3} = \frac{8}{15}\ \frac{8}{15}$$

DIVIDING FRACTIONS: To divide fractions multiply the second numbers reciprocal (turn upside down).

The reciprocal of $\frac{3}{5}\ \frac{3}{5}$ is $\frac{5}{3}\ \frac{5}{3}$.

$$\frac{4}{5}\ \frac{4}{5} \div \frac{3}{7}\ \frac{3}{7} = \frac{4}{5}\ \frac{4}{5} \times \frac{7}{3}\ \frac{7}{3} = \frac{28}{15}\ \frac{28}{15} = 1\ \frac{13}{15}\ \frac{13}{15}$$

COMPLEX FRACTIONS: A complex fraction has a fraction as the top number (numerator) and a whole number as the bottom number (denominator). Change the denominator to a fraction, $5=\frac{5}{1}\ \frac{5}{1}$, and divide the fractions.

$$\frac{3}{4}\ \frac{3}{4} \div 5 = \frac{3}{4}\ \frac{3}{4} \div \frac{5}{1}\ \frac{5}{1} = \frac{3}{4}\ \frac{3}{4} \times \frac{1}{5}\ \frac{1}{5} = \frac{3}{20}\ \frac{3}{20}$$

Add/Subtract

1. $\frac{1}{2}\ \frac{1}{2} + \frac{1}{4}\ \frac{1}{4} =$
2. $\frac{6}{8}\ \frac{6}{8} + \frac{3}{4}\ \frac{3}{4} =$
3. $\frac{3}{4}\ \frac{3}{4} + \frac{1}{3}\ \frac{1}{3} =$

4. $\frac{4}{10}\frac{4}{10} + \frac{1}{5}\frac{1}{5} =$
5. $\frac{1}{2}\frac{1}{2} - \frac{2}{7}\frac{2}{7} =$
6. $\frac{7}{9}\frac{7}{9} + \frac{1}{2}\frac{1}{2} =$
7. $\frac{1}{2}\frac{1}{2} + \frac{7}{8}\frac{7}{8} =$
8. $\frac{1}{4}\frac{1}{4} + \frac{2}{6}\frac{2}{6} + \frac{1}{2}\frac{1}{2} =$
9. $\frac{5}{6}\frac{5}{6} - \frac{3}{12}\frac{3}{12} =$
10. $\frac{6}{8}\frac{6}{8} + \frac{1}{2}\frac{1}{2} + \frac{1}{4}\frac{1}{4} =$
11. $\frac{8}{9}\frac{8}{9} - \frac{1}{3}\frac{1}{3} =$
12. $\frac{7}{9}\frac{7}{9} + \frac{1}{3}\frac{1}{3} + \frac{2}{6}\frac{2}{6} =$
13. $\frac{2}{4}\frac{2}{4} - \frac{1}{3}\frac{1}{3} =$
14. $\frac{2}{4}\frac{2}{4} + \frac{9}{12}\frac{9}{12} =$
15. $\frac{5}{7}\frac{5}{7} - \frac{1}{2}\frac{1}{2} =$

Multiply/Divide

1. $\frac{4}{9}\frac{4}{9} \times \frac{3}{6}\frac{3}{6} =$
2. $\frac{2}{7}\frac{2}{7} \times \frac{1}{2}\frac{1}{2} =$
3. $\frac{7}{8}\frac{7}{8} \times \frac{2}{5}\frac{2}{5} =$
4. $\frac{1}{8}\frac{1}{8} \times \frac{2}{3}\frac{2}{3} =$
5. $\frac{1}{4}\frac{1}{4} \times \frac{3}{7}\frac{3}{7} =$
6. $\frac{4}{5}\frac{4}{5} \times \frac{1}{2}\frac{1}{2} =$
7. $\frac{9}{11}\frac{9}{11} \times \frac{13}{17}\frac{13}{17} =$
8. $\frac{1}{5}\frac{1}{5} \times \frac{2}{3}\frac{2}{3} =$
9. $\frac{3}{19}\frac{3}{19} \times \frac{8}{14}\frac{8}{14} =$
10. $\frac{10}{16}\frac{10}{16} \times \frac{5}{11}\frac{5}{11} =$
11. $\frac{1}{2}\frac{1}{2} \times \frac{13}{17}\frac{13}{17} =$
12. $\frac{1}{3}\frac{1}{3} \times \frac{5}{7}\frac{5}{7} =$
13. $\frac{6}{12}\frac{6}{12} \div \frac{12}{16}\frac{12}{16} =$
14. $\frac{10}{18}\frac{10}{18} \div \frac{11}{18}\frac{11}{18} =$
15. $\frac{2}{9}\frac{2}{9} \div \frac{1}{2}\frac{1}{2} =$
16. $17 \times \frac{2}{4}\frac{2}{4}$
17. $13 \times \frac{10}{13}\frac{10}{13}$
18. $22 \times \frac{4}{11}\frac{4}{11}$
19. $20 \times \frac{9}{10}\frac{9}{10}$
20. $11 \times \frac{3}{15}\frac{3}{15}$
21. $6 \times \frac{2}{3}\frac{2}{3}$
22. $15 \times \frac{3}{5}\frac{3}{5}$
23. $48 \times \frac{6}{8}\frac{6}{8}$
24. $3 \times \frac{5}{15}\frac{5}{15}$
25. $16 \times \frac{3}{4}\frac{3}{4}$

QUIZ 3 (Decimals and percents)

DECIMALS: You can change any fraction into a decimal by dividing the top number (numerator) by the bottom number (denominator). $\frac{3}{4}\frac{3}{4} = 3 \div 4 = 0.75$

Where you put the decimal point is very important. Each spot before and after the decimal point has a different meaning.

.3 = $\frac{3}{10}$ because 3 is in the tenths spot.

5.75= 5 $\frac{75}{100}$ because the 7 is in the tenths spot and the 5 is in the hundredths spot.

ADDING AND SUBTRACTING DECIMALS:
When you add and subtract decimals you have to make sure the decimals lined up.

7.92 + 34.9 + 0.097 + 6.37=

```
  7.92
 34.9
  0.097
+ 6.37
 49.287
```

MULTIPLYING AND DIVIDING DECIMALS:
You multiply and divide decimals the same way you would whole numbers. The important thing to remember is that the answer will have the same number of decimal places as the total of the two numbers you started with.

```
  3.283  (3 decimal places)
X  .97   (2 decimal places)
  22981
 285470
3.18451 (5 decimal places)
```

When you divide a decimal by a whole number, divide as you would a whole number, but bring the decimal straight up into the answer. When you divide a decimal by a decimal you have to get rid of the decimal in the divisor. You count the number of spaces you must move the decimal, and then move it that many times in the same direction in the dividend.

15.5 ÷ .31 = 1550 ÷ 31 = 50

PERCENTS: Percent is another way of describing a part-to-whole just like fractions and decimals. Four of eight pieces of pizza is $\frac{4}{8}$ of the pizza, $\frac{1}{2}$, or using a decimal .5 pieces. As a percent if the whole pizza is 100% , then half is 50% because 50 is half of 100.

CONVERSION: To convert a percent into a fraction just put the percent over 100 –

3% = $\frac{3}{100}$ 30% = $\frac{30}{100}$

To convert a fraction into a percentage you must first convert it into a decimal. Divide the top number by the bottom number.

$\frac{1}{5}$ = 1 ÷ 5 = .2

Then move the decimal two places to the right, and put a percent symbol.

.2 = 20. = 20% ($\frac{1}{5}$ = 20%)

To find the percent of a number change the percent to a decimal and multiply the by the number.

What is 20% of 85?

20% = .20 .20 x 85 = 17

20% of 85 = 17

1:	2:	3:
8.40	0.87	5.40
× 9.60	× 95.00	× 7.20

4:
5.70
× 1.80

5:
18.00
× 0.97

6:
31.00
× 0.77

1. $6.8 \div 0.4 =$ __
2. $2.1 \div 0.1 =$ __
3. $7.8 \div .03 =$ __
4. $5.2 \div .01 =$ __
5. $7.0 \div .02 =$ __
6. $4.9 \div .07 =$ __
7. $.24 \div 0.2 =$ __
8. $.63 \div 0.3 =$ __
9. $.72 \div 0.9 =$ __
10. $.30 \div 0.3 =$ __

Write each percent as a decimal.

1. 30%
2. 2%
3. 41%
4. 67%
5. 74%
6. 23%
7. 7%
8. 89%
9. 92%

Write each fraction, decimal, or ratio as a percent.

1. 0.19
2. 32:100
3. $\frac{9}{100}$
4. $\frac{97}{100}$ $\frac{97}{100}$
5. 0.83
6. 0.51
7. 20:100
8. $\frac{65}{100}$ $\frac{65}{100}$
9. 0.02
10. 76:100

11. $\frac{5}{100}\ \frac{5}{100}$

12. $\frac{14}{100}$ $\frac{14}{100}$

13. 46:100

QUIZ 4 (Exponents)

MULTIPLYING AND DIVIDING BY POWERS OF TEN

To multiply decimals by a power of 10 (10, 100, 1000) move the decimal to the right the number of zeros.

24.7 x 100 = 2470 3.75 x 10 = 37.5

To divide decimals by a power of 10 move the decimal to the left the number of zeros.

24.7 ÷ 100 = .247 3.75 ÷ 10 = .375

ROUNDING NUMBERS

If the last digit of the number is less than 5, **round down**. (32.4 =32, 12.2 = 12)

If the last digit of the number is greater or equal to 5, **round up**. (32.5 = 33, 12.7=13)

15.4 rounded to the nearest whole number= 15

.76 rounded to the nearest tenth = .8,

-0.32 rounded to the nearest tenth = -0.3

EXPONENTS

$3^3 = 3 \times 3 \times 3 = 27$ $5^2 = 5x5 = 25$

EXPONENTS WITH SAME BASE NUMBER

Multiply - add the exponents $n^2 \times n^3 = n^5$

Divide - subtract the exponent $n^5 \div n^3 = n^2$

Raise the Power - multiply the exponents $(n^2)^3 = n^6$

Quiz 4 **(Exponents)**

1. $8^{12} \times 8^{10}$

2. 2×2^4

3. $4^{11} \times 4^8$

4. $3^2 \times 3 \times 3^{10} \times 3^6$

5. $7^{12} \times 7^3 \times 7^{10}$

QUIZ 5 (Changes in percents and averages)

CALCULATING CHANGES IN PERCENTAGE

To calculate the percent change, use the following formula:

Percent increase or decrease =

Difference ÷ Original amount

A $40 book went on sale for $35. What was the percentage by which the book was discounted?

% decrease = 5 ÷ 40 = .125 = 12.5%

PROPORTIONS

If a 3 foot high flagpole casts a shadow of 2 feet, then a 6 foot high flagpole will cast a shadow of how long?

Flagpole / Shadow = 3/2 = 6/? 3 (x2) = 6

2 (x2) = **4**

6 ft high flagpole will cast a shadow of 4 ft.

PROBABILITY

If there are 15 poker chips, 6 red, 4 blue, and 5 white how likely is it that we get a blue chip if we take one out of a bag?

Total blue 4

Total chips 15

AVERAGES

To find the average of a set of numbers, add the numbers and divide the sum by the number of numbers in the set.

What is the average of 3, 5, and 10.

3+5+10 = 18 18÷3 = ***6*** *average is 6.*

DIRECTIONS: Find the average and the median of each group of numbers.

1. • 5 8 9 2 6 Average: _____
2. • 7 8 9 4 2 3 9 Average: _____
3. • 5 8 9 7 6 8 9 7 4 Average: _____
4. • 3 4 6 7 Average: _____
5. • 7 8 9 4 1 0 2 1 Average: _____

QUIZ 6 (Algebra and binomials)

ALGERBRA

SOLVING FOR X

Isolate the X on one side of the equation.

What you do to one side of the equation you must do to the other side of the equation.

3x = 27, divide both sides by 3

X = 9

x-5 = 20 , add 5 to both sides

x = 25

3x + 5 = 26, subtract 5 on both sides

3x = 21 , divide both sides by 3

X = 7

FACTORING

The factors of a number are the numbers that when multiplied together equal that number.

$6x^2y + 3xy^2$

(both numbers have 3, so take out the 3 both numbers have an x and a y)

$3xy\,(2x + y) = 6x^2 + 3xy^2$

FACTORING BINOMIALS

Using 2 equations for an answer is necessary if there is a x^2 and an x.

$X^2 + 2x = 15$ subtract 15 from both sides

$X^2 + 2x - 15 = 0$ factor the 15 (1, 15) (3, 5)

(Decide which of the pair of factors added or subtracted equals the middle number.)

(5-3=2)

(x + 5) (x – 3)

To check work use FOIL

First

Outer

Inner

Last

Multiply the **first** terms in the factors: *x* x *x*=x^2

Multiply the **outer** terms together: *X X* -3= -3*X*

Multiply the **inner** terms together: 5 x *x* = 5x

Multiply the **last** terms together: 5 x -3 = -15

(x + 5) (x – 3) = x^2 – 3x + 5x – 15 = x^2 + 2x – 15

Pay attention where the minus sign is.

$R^2 – 9r + 20$

Factor the 20 = (1,20) (2,10) (4,5)

(r-4) (r-5)

Quiz 6 **(Algebra and binomials)**

SOLVE FOR N

1) $N + 3 = 15$

2) $2N + 7 = 19$

3) $N - 5 = 7$

4) $6N - 1 = 47$

5) $4N = 12$

6) $6N = 42$

7) $0.5N = 10$

8) $N - 7.2 = 10.1$

9) $N + 3.25 = 8$

10) $0.3N = 4.2$

1. $(x+1)(x+2)$
2. $(x+1)(x-3)$
3. $(x-1)(x+8)$
4. $(x+5)(x+6)$
5. $X^2 - 4x - 32$
6. $X^2 + 5x + 25$
7. $16x^2 - 25$
8. $49x^2 - 64$

QUIZ 7 **(Inequalities and special formulas)**

INEQUALITIES

When there isn't an equal sign in the equation, but greater than (>) or less than (<), solve the equation just like the equal sign is there.

$2x > 16$ divide both sides by 2
$X > 8$

SPECIAL FORMULAS

Motion – Distance = Rate x Time
Jackson drove 200 miles in 4 hours. How fast was he driving?

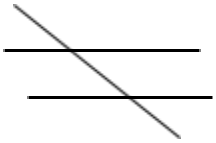
200 = R x 4 divide both sides by 4
50 = Rate

Interest – Interest = Principle x Rate x Time
How long must John invest $500 at 7% to earn $350 in interest.

$350 = $500 x .07 x Time divide both sides by 500
.7 = .07T divide both sides by .07
10 = Time

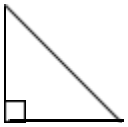
QUIZ 8 (Geometry)

GEOMETRY



Parallel lines with a line across it:

- Two kinds of angles are created, big ones and small ones.
- All the big angles are equal, and all the small ones are equal.
- Any big angle plus any small angle equals $180^{o.}$



Triangles – the three angles equal 180^0. Right angle is 90^0, so in a right triangle, the other two angles equal 90^0.

Finding Area and Perimeter

Rectangle 3

5

Perimeter = L + L + W + W

16 = 3 + 3 + 5 + 5

Area = L x W

CIRCLE

D = Diameter

R = Radius

Perimeter = Dπ Area = πR^2

Name: _____

Area and Perimeter of Rectangles

Find the area and perimeter of each rectangle.

a. 12 cm

5 cm

perimeter = _____

area = _____

b. 9 m

3 m

perimeter = _____

area = _____

c. 11 km

6 km

perimeter = _____

area = _____

d. 12 cm

7 cm

perimeter = _____

area = _____

e. 8 cm

4 cm

perimeter = _____

area = _____

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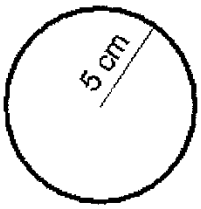
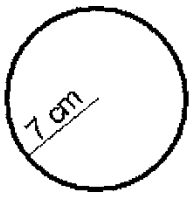
Use the radii or the perimeter to calculate the *area* for each of the circles below. Use 3.14 as the value of Pi.

area = cm^2



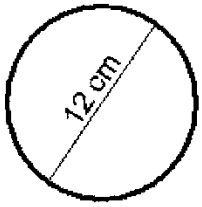
area = cm^2



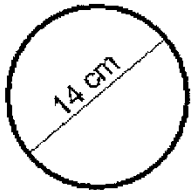
area = cm^2

area = cm^2

area = cm^2



area = cm^2



area = cm^2

area = cm^2

ANSWER SHEET

Quiz 2 **(fractions)**

1. $\frac{3}{4}\ \frac{3}{4}$
2. $^{2}/_{8}$ or $^{1}/_{4}$
3. $\frac{13}{12}\ \frac{13}{12}$ or $1\frac{1}{12}\ \frac{1}{12}$
4. $\frac{1}{5}\ \frac{1}{5}$
5. $\frac{3}{14}\ \frac{3}{14}$
6. $\frac{5}{18}\ \frac{5}{18}$
7. $\frac{11}{8}\ \frac{11}{8}$ or $1\frac{3}{8}\ \frac{3}{8}$
8. $\frac{5}{12}\ \frac{5}{12}$
9. $\frac{7}{12}\ \frac{7}{12}$
10. $\frac{10}{8}\ \frac{10}{8}$ or $1\frac{1}{2}\ \frac{1}{2}$
11. $\frac{5}{9}\ \frac{5}{9}$
12. $\frac{10}{9}\ \frac{10}{9}$ or $1\ \frac{1}{9}\ \frac{1}{9}$
13. $\frac{2}{12}\ \frac{2}{12}$ or $\frac{1}{6}\ \frac{1}{6}$
14. $\frac{3}{12}\ \frac{3}{12}$ or $\frac{1}{4}\ \frac{1}{4}$
15. $\frac{3}{14}\ \frac{3}{14}$
1. $\frac{12}{54}\ \frac{12}{54}$ or $\frac{6}{27}\ \frac{6}{27}$
2. $\frac{2}{14}\ \frac{2}{14}$ or $\frac{1}{7}\ \frac{1}{7}$
3. $\frac{14}{40}$ or $\frac{7}{20}\ \frac{14}{40}$ or $\frac{7}{20}$
4. $\frac{2}{24}\ \frac{2}{24}$ or $\frac{1}{12}\ \frac{1}{12}$
5. $\frac{3}{28}\ \frac{3}{28}$
6. $\frac{4}{10}\ \frac{4}{10}$ or $\frac{2}{5}\ \frac{2}{5}$
7. $\frac{117}{187}\ \frac{117}{187}$
8. $\frac{2}{15}\ \frac{2}{15}$
9. $\frac{24}{266}\ \frac{24}{266}$ or $\frac{12}{133}\ \frac{12}{133}$
10. $\frac{50}{176}\ \frac{50}{176}$ or $\frac{25}{88}\ \frac{25}{88}$
11. $\frac{13}{34}\ \frac{13}{34}$
12. $\frac{5}{21}\ \frac{5}{21}$
13. $\frac{72}{192}\ \frac{72}{192}$ or $\frac{3}{8}\ \frac{3}{8}$
14. $\frac{110}{234}\ \frac{110}{234}$ or $\frac{55}{117}\ \frac{55}{117}$
15. $\frac{2}{18}\ \frac{2}{18}$ or $\frac{1}{9}\ \frac{1}{9}$

17. 8.5
18. 10
19. .47
20. 18
21. 2.2
22. 4.7
23. 6.32
24. 15.42

Quiz 3 **(decimals and percents)**

1. 80.64
2. 82.65
3. 38.88
4. 10.26
5. 17.46
6. 23.87

1. 17
2. 21
3. 260
4. 520
5. 350
6. 70
7. 1.2
8. 2.1
9. .8
10. 1

1. .3
2. .02
3. .41
4. .67
5. .74
6. .23
7. .07
8. .89
9. .92

1. 19%
2. 32%
3. 9%
4. 97%
5. 83%
6. 51%
7. 20%
8. 65%
9. 2%
10. 76%
11. 5%
12. 14%
13. 46%
14. 74%

Quiz 4 **(Exponents)**

1. 8^{22}
2. 2^{5}
3. 4^{19}
4. 3^{19}
5. 7^{25}

Quiz 5 **(Changes in percents and averages)**

1. 6
2. 6
3. 7
4. 5
5. 4

Quiz 6 **(Algebra and binomials)**

SOLVE FOR N

1. 12
2. 2
3. 12
4. 10
5. 3
6. 7
7. 5
8. 17.3
9. 4.75
10. 14

1. $x2 + 3x + 2$
2. $x2 - 2x - 3$
3. $x2 + 7x - 8$
4. $x2 + 11x + 30$
5. $(x-2)(x+2)$
6. $(x+5)(x-5)$
7. $(4x-5)(4x+5)$
8. $(7x+8)(7x-8)$

QUIZ 8 (Geometry)

PERIMETER and AREA Rectangle

A. P – 34 A - 60
B. P – 24 A – 27
C. P – 34 A – 66
D. P – 38 A – 84
E. P – 24 A – 32

Area of a Circle

1. 9π
2. 25π
3. 49π
4. 4π
5. 6.25π

6. 36π
7. 49π
8. 9π