Name:_____ **Date:_____**

NO CALCULATORS. MUST SHOW ALL YOUR STEPS AND ALL YOUR WORK.
USE A SEPARATE PAPER FOR YOUR WORK.

1. Evaluate without using calculator.

$924 + 6304 =$	$6892 + 909 =$	$386 + 999 =$	$1009 + 999 =$
$238.68 + 99 =$	$90208.9 + 698.98 =$	$158.98 + 8.098 =$	$68.964 + 0.887 =$
$56 - 28 =$	$198 - 69 =$	$30201 - 809 =$	$48 - 39 =$
$58.26 - 9.67 =$	$68.01 - 9.9 =$	$120.08 - 9.8 =$	$2008.067 - 69.07 =$
$12 - 14 =$	$3 - 10 =$	$8 - 20 =$	$22 - 100 =$
$28 \times 43 =$	$12 \times 18 =$	$22 \times 16 =$	$43 \times 11 =$
$68.01 \times 0.2 =$	$0.09 \times 0.8 =$	$2.11 \times 6 =$	$15.8 \times 9 =$
$-34 - 65 =$	$34.25 - 68.98 =$	$-2.57 - 1.0999 =$	$3.89 - 16.98 =$
$-29 \times 43 =$	$-12 \times -18 =$	$22 \times (-16) =$	$(-43) \times (-33) =$

2. Evaluate fractions. You may leave the result as improper fraction. Must write fraction in the simplest form.

$\frac{6}{7} + \frac{2}{3} =$ $\frac{9}{4} + \frac{1}{2} =$ $\frac{14}{6} + \frac{2}{5} =$ $\frac{5}{11} + \frac{9}{11} =$ $\frac{7}{13} + \frac{5}{13} =$ $\frac{4}{17} + \frac{13}{17} =$

$6\frac{1}{2} + 9\frac{3}{4} =$ $11\frac{4}{7} + 28\frac{3}{7} =$ $8\frac{1}{8} + 2\frac{1}{4} =$ $5 + 1\frac{2}{7} =$

$\frac{9}{11} - \frac{1}{3} =$ $\frac{21}{5} - \frac{6}{7} =$ $\frac{15}{16} - \frac{7}{8} =$ $\frac{21}{7} - 2 =$ $\frac{81}{9} - 6 =$ $\frac{49}{7} - 2 =$

$\frac{5}{8} \times \frac{2}{3} =$ $\frac{9}{11} \times \frac{2}{3} =$ $\frac{3}{7} \times \frac{7}{3} =$ $\frac{1298}{3842} \times \frac{3842}{1298} =$ $\frac{25}{26} \times \frac{2}{50} =$ $\frac{6}{5} \times \frac{5}{2} =$

$\frac{21}{16} \div \frac{3}{16} =$ $\frac{9}{7} \div \frac{9}{7} =$ $\frac{20}{11} \div \frac{10}{33} =$ $\frac{25}{17} \div \frac{26}{17} =$ $\frac{68}{105} \div \frac{68}{5} =$ $\frac{8}{18} \div \frac{11}{180} =$

$\frac{\frac{2}{7}}{\frac{1}{14}} =$ $\frac{\frac{9}{11}}{\frac{16}{11}} =$ $\frac{\frac{14}{108}}{\frac{7}{108}} =$ $\frac{\frac{916}{1289}}{\frac{916}{1289}} =$ $\frac{\frac{13}{17}}{13} =$

3. Find the missing number. (Find the variable that makes the equation true) (Solve for the variable x)
You may leave the answer as improper fraction. Must write the fraction in the simplest form.

$12 + x = 14$ $28 + x = 35$ $x + 6 = 289$ $x + 101 = 125$

$9.8 + x = 10$ $78 + x = 82.8$ $90 + x = 98.86$ $5.9 + x = 8.8$

$2x - 5 = 15$ $-3x + 35 = 30$ $-5x - 12 = -20 + x$ $6x - 10 = 5x - 1$

$\frac{1}{2}x - 1 = 4$ $-\frac{2}{3}x + 1 = 9$ $12 = 3x + 10$ $\frac{-3x}{4} - 16 = 1$

$2x + 18 = x + 15$ $4x - 12 = 2x + 20$ $-3x + 19 = 2x - 5$ $6x - 3 = -x + 10$

$3(x - 5) = -x - 35$ $\frac{4}{7}(-7x + 1) + \frac{3}{7} = 7x - 5$ $\frac{-3}{5}(\frac{5}{3}x + \frac{5}{3}) = 22 - 5x$

4. Combine Like-terms (and simplify if possible).

$2x - 4y + 3xy - 5x - 10y - 13xy =$

$-5x + 2x^2 - 5x - 6y^2 - 2y - 14xy + y^2 + 3x^2 =$

$x^2 + y^2 + z^2 - xyz =$

$15xyz - 2y^2 - 5xyz + x^2 - 10xyz =$

$25 - x^3 - 5 + 5x^3 - xy =$

5. Solve the percent problems. Think what percent means; then make your logical answer. Explain your reasoning.
A) What is 50% of 200?
B) What is 100% of 200?
C) What is 25% of 200?
D) What is 75% of 200?
E) What is 10% of 200?
F) What is 1% of 200?
G) What is ½% of 200?
H) What is 0.5% of 200?
I) What is 200% of 200?
J) What is 500% of 200?
K) What is 1000% of 200?

6. You are buying a pair of shoes, on sale for 15% of the regular price. If the regular price is $55, what would be the sale price (before tax)? If sale-tax rate is 8.86%, what is the tax amount? What is the final price?

7. You are buying a Jacket, on sale for 15% of the regular price. And you have a coupon for 10% off the sales price. The regular price is $100. Sales tax rate is 8.887%.
(a) What is the discounted amount (including the two discounts)?
(b) What is the sales price (before tax, but includes the two discounts)?
(c) What is the tax amount?
(d) What is the final price?

8. You are investing $12,000 in a bank with annual simple interest rate of 1.2%. What is the ***simple interest amount*** and the ***ending balance*** after; (a) 4 months?, (b) 8 months?, (c) 1 year, (d) 4 years, and (e) 10 years?

9. Answer by calculation (hour, minute and second relationships). Show your work. Do Not Use Calculator For Your Initial Calculations. (You may check your answer using a calculator)
   A) How many minutes are in 32 hours?
   B) How many minutes are in 100 hours?
   C) How many seconds are in 15 minutes?
   D) How many seconds are in 1 hour?
   E) How many seconds are in 5 hours?
   F) How many seconds are in 24 hours?
   G) How many seconds are in a week?

10. You save $3.25 each day to buy your brother a birthday present. How much do you save after 12 days of saving?

11. You save $1.50 each day to buy your Mom a present. How much would you be saving if you save every day of April and May all together?

12. You work as a newspaper delivery person and you get paid $4.80 per hour, plus $10 after each set of 100 deliveries.
   How much would you make after 50 hours, delivery 400 newspaper?

13. It is 420 miles from SF to LA. If you drive at an average speed of 60 mile per hour, how long will it take you to get to LA from SF without any stop? If you had 3 stops for 12 minutes each stop, how long will it take you to get to LA?

14. If you bike at an average speed of ¼ mile per minute, how many miles do you bike after 1 hour, non stop?

15. If biking back the same distance (see problem 10) takes you 2 hours, what has been your average speed?

16. If biking back the same distance (see problem 10) takes you 4 hours, what has been your average speed?

17. Evaluate without using calculator.

$63378 + 78787 =$	$589 + 60009 =$	$2359009 + 10043 =$	$9999 + 9999 =$
$96.59 + 100.088 =$	$628.91 + 99.99 =$	$45.059 + 99.0095$	$468.9098 + 9.9 =$
$158 - 0.98 =$	$2098.81 - 9.99 =$	$674 - 89.64 =$	$455 - 86.086 =$
$128 \times 11 =$	$1345 \times 1001 =$	$98 \times 222 =$	$9009 \times 909 =$

18. Divide, using long division.

$12\overline{)120}$ $5\overline{)695}$ $4\overline{)7340}$ $6\overline{)822}$ $7\overline{)4942}$ $11\overline{)8932}$

19. Write as improper fraction.

$3\frac{2}{3} =$	$6\frac{1}{8} =$	$5\frac{4}{5} =$	$7\frac{3}{4} =$	$1\frac{1}{2} =$	$11\frac{2}{3} =$
$5\frac{2}{3} =$	$8\frac{6}{11} =$	$16\frac{1}{2} =$	$9\frac{2}{3} =$	$4\frac{3}{7} =$	$2\frac{11}{13} =$

20. Write as mixed numbers.

$\frac{3}{2}=$ $\frac{5}{3}=$ $\frac{7}{4}=$ $\frac{11}{9}=$ $\frac{14}{3}=$ $\frac{15}{14}=$ $\frac{33}{4}=$

21. Complete equivalent fractions, by finding out what the variable x should be.

$\frac{3}{4}=\frac{x}{8}$ $\frac{5}{2}=\frac{15}{x}$ $\frac{88}{33}=\frac{x}{3}$ $\frac{70}{x}=\frac{7}{4}$ $\frac{8}{9}=\frac{x}{27}$ $\frac{45}{9}=\frac{x}{1}$ $\frac{12}{23}=\frac{52}{x}$

$\frac{100}{72}=\frac{50}{x}$ $\frac{36}{27}=\frac{x}{3}$ $\frac{120}{600}=\frac{x}{10}$ $\frac{7}{x}=\frac{42}{30}$ $\frac{6}{x}=\frac{36}{66}$ $\frac{11}{8}=\frac{x}{88}$ $\frac{3}{4}=\frac{x}{8}$

22. Combine exponents, using the rules with exponents

$2x^3\times 8x^3=$ $12x^7\times x^2=$ $-y^5\times 4y^3=$ $(-3a^3)(-8a^4)=$ $7p^6\times p=$

$\frac{m^{15}}{m^{10}}=$ $\frac{n^5m^3}{nm}=$ $\frac{-12pm^2k^5}{4pmk^2}=$ $\frac{5gkp^2}{g^2k^2p^2}=$ $\frac{7a^{-1}b^{-3}}{14a^4b^4}=$

23. Evaluate exponential terms for given values of variables.

$x=1;$ $y=-1;$ $a=3;$ $b=-3;$ $m=5;$ $n=6$

$x^4=$ $y^4=$ $(yb)^3=$ $(yb)^2=$ $b^3=$ $b^2=$

$yn^2=$ $yb^2=$ $yb^3=$ $n^2m^2=$ $mn^5=$

24. Write in Scientific Notation.

$12{,}000=$ $24{,}600=$ $96{,}000{,}000=$ $3{,}025{,}000{,}000{,}000=$

$290{,}000{,}000{,}000=$ $300{,}000{,}000{,}000{,}000=$ $-502{,}000{,}000{,}000=$

$0.00000000000032=$ $0.00000000000000554=$ $-0.000000000000000000012=$

$437000\times 10^{14}=$ $34{,}000{,}000\times 10^{22}=$ $9.8\times 10^{8}\times 10^{-56}=$

25. Write in Standard form.

$2.08\times 10^{5}=$ $3.98\times 10^{8}=$ $-2.10\times 10^{10}=$ $5.63\times 10^{15}=$ $1.02\times 10^{7}=$

$2.08\times 10^{-5}=$ $2.035\times 10^{-9}=$ $9.028\times 10^{-12}=$ $1.883\times 10^{10}=$ $2.106\times 10^{-9}=$

$7.9092\times 10^{12}=$ $2.08974\times 10^{-16}=$ $-1.98\times 10^{-14}=$ $-8.088\times 10^{15}=$ $5.50\times 10^{-12}=$

26. Evaluate expression, y for given values of x.

$y = ?$ *for* $x = -3,\ -2,\ -1,\ 0,\ 1,\ 2,\ 3$

$y = 3x - 2$	$y = 3x + 2$	$y = 3x$
$y = -4x - 1$	$y = -4x + 1$	$y = -4x$
$y = -\frac{2}{3}x - 3$	$y = -\frac{2}{3}x + 3$	$y = -\frac{2}{3}x$
$y = \frac{1}{3}x - 5$	$y = \frac{1}{3}x + 5$	$y = \frac{1}{3}x$
$y = x^2$	$y = x^2 + 7$	$y = x^2 - 7$
$y = \frac{1}{x}$	$y = x$	$y = -x$

27. A) Graph y in problem 26 on x-y coordinate plane.
    B) Identify which ones are straight lines and which ones not straight line.
    C) Identify which lines are parallel to each other.
    D) Identify which one is undefined at x=0

28. Plot the following points on x-y plane.

$(0,0)$	$(-9,-9)$	$(-5,-5)$	$(-7,0)$
$(-6,2)$	$(-9,9)$	$(0,8)$	$(8,8)$
$(7,0)$	$(8,-8)$	$(3,-4)$	$(0,-6$

29. Solve the inequalities and graph solutions on number line.
    You may leave the answer as improper fraction. Must write the fraction in the simplest form.

$5x - 12 > 25$	$6x + 4 \le 9$	$2x + \frac{1}{2} \ge 0$	$4x - \frac{2}{3} \le \frac{1}{3}$
$\frac{2}{3}p + 4 < 24$	$\frac{4}{3}k - \frac{2}{3} < \frac{7}{3}$	$9p + \frac{1}{3} < 9$	$h + \frac{11}{13} \le \frac{24}{13}$
$-5x - 12 > 25$	$-6x + 4 \le 9$	$-2x + \frac{1}{2} \ge 0$	$-4x - \frac{2}{3} \le \frac{1}{3}$

30. James has in his pockets two times money as his friend Walter. They both have all together a total of $100. How much money does each have in the pocket?

31. Bobby is ½ younger than his brother Sam. The sum of their two ages is 24. How old are they?

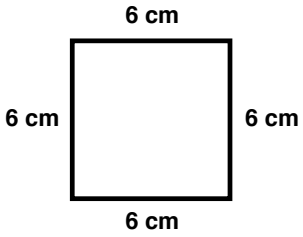
32. A T-shirt shore carries 360 quantities of Word Cup Soccer 2010 in three sizes, Small, Medium and Large. There are 3 times Large size T-shirts as there are Small-size T-shirts. And there are 2 times Medium as there are Small sizes. How many of each size T-shirts are there?

33. There are two water valves faucets to a swimming pool. One value when opens, can fill up the pool in 2 hours. They other valve, when opens, can fill up the pool in 4 hours. If both valves are open at the same time, how long will it take to fill up the swimming pool?

34. Jim can paint his house in 10 hours. Pat can paint the same house in 20 hours. Kurt can paint the same house in 25 hours. If they (the three of them) work together, how long will it take to paint the same house?

35. Calculate the ***perimeter (circumference for circle)*** and the ***area*** of given shapes. Start with Fact Statement (formula). *Show the correct **Unit**.* Must Show All Your Work

A)



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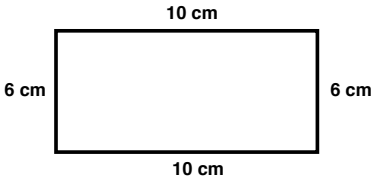

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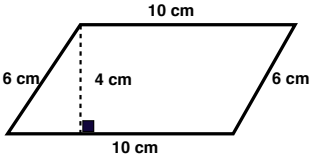

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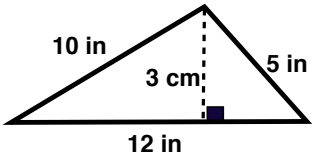

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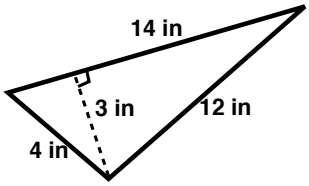

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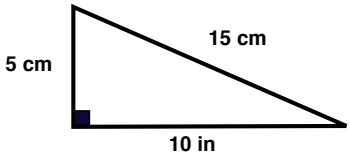

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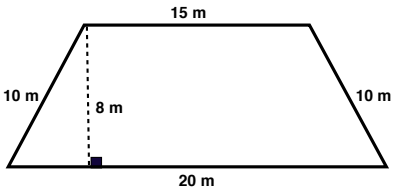

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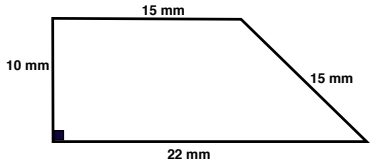

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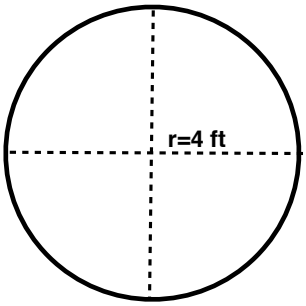

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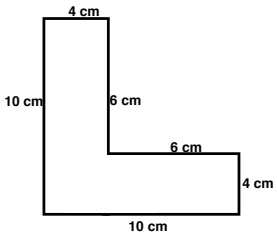

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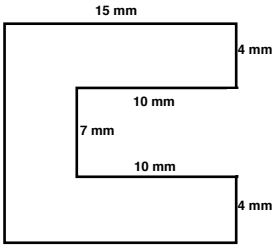
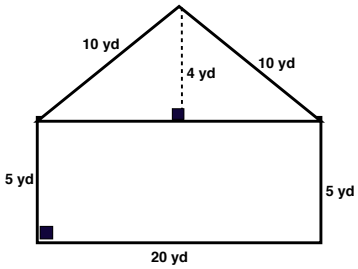
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