Name _____
Period _____
Date _____

Intermediate Algebra Practice Test

Evaluate the following expressions. Show all work. Box your final answer.

1. $(8 + 12) \div 4 =$ $20 \div 4 = \boxed{5}$	2. $8 + (12 \div 4) =$ $8 + 3 = \boxed{11}$
3. $\frac{36 \div 9 + 4}{13-11} =$ $\frac{4+4}{2} = \frac{8}{2} = \boxed{4}$	4. $36 \div 9 + [4 \div (13 - 11)] =$ $4 + [4 \div 2]$ $= 4 + 2$ $= \boxed{6}$
5. $(9 \cdot 11) - (7 \cdot 11) =$ $99 - 77 = \boxed{22}$	6. $(6 \cdot 12) - (3 \cdot 12) =$ $72 - 36 = \boxed{36}$
7. $3(4 + 5) =$ $3(9) = \boxed{27}$	8. $(3 \cdot 4) + 5 =$ $= 12 + 5 = \boxed{17}$
9. $10 \cdot 7 + 2 =$ $70 + 2 = 72$	10. $3 + (6 - 2) =$ $3 + 4 = \boxed{7}$

Evaluate each fractional expression. Box your final answer. Do <u>not</u> change improper fractions to a mixed number. Have all answers in lowest terms.

11. $\frac{7}{8} + \frac{3}{8} =$ $\frac{10}{8} = \boxed{\frac{5}{4}}$	12. $\frac{\cancel{4}^{1}}{\cancel{21}_{3}} \cdot \frac{\cancel{7}^{1}}{\cancel{32}_{8}} =$ $\boxed{\frac{1}{24}}$
13. $\frac{6}{7} \div \frac{36}{11} =$ $\frac{\cancel{6}^{1}}{7} \cdot \frac{11}{\cancel{36}_{6}} = \boxed{\frac{11}{42}}$	14. $\frac{5}{17} - \frac{2}{17} =$ $\boxed{\frac{3}{17}}$

Evaluate the following if x = 4, y = 2, and z = 6. First rewrite the expression, substituting the values in for the variables. Show all steps and box your final answer.

Example: $\frac{1}{2} \cdot z\,(x+y) = \frac{1}{2} \cdot 6(4+2)$

$= \frac{1}{2} \cdot 6(6)$

$= 3(6)$

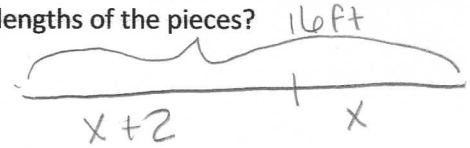
$\boxed{= 18}$

15. 2x + 2y = $2(4)+2(2)=8+4=\boxed{12}$	16. $\frac{1}{2} \cdot (x+z) =$ $\frac{1}{2}(4+6)=\frac{1}{2}(10)=\boxed{5}$
17. (3y + x) ÷ (z – 2y) = $[3(2)+4]\div[6-2(2)]$ $=[6+4]\div[6-4]$ $=10\div 2=\boxed{5}$	18. x + 7 = $4+7=\boxed{11}$
19. 8x = $8(4)=\boxed{32}$	20. 4x – 2y = $4(4)-2(2)=16-4$ $=\boxed{12}$
21. x + (z – 5) = $4+(6-5)=4+1=\boxed{5}$	22. 5z – 3x = $5(6)-3(4)=30-12$ $=\boxed{18}$
23. 3x – 4 = $3(4)-4=12-4=\boxed{8}$	24. $\frac{3z-2y}{x+3} =$ $\frac{3(6)-2(2)}{4+3}=\frac{18-4}{7}$ $=\frac{14}{7}=\boxed{2}$

Solve the following word problems. Show all work. Box your final answer. If you solve in your head, you must *at least* write a math sentence that shows the answer being checked.

Example: A rectangle is 12 cm wide. The area of the rectangle is 60 square cm. What is the length of the rectangle?
$\boxed{\text{Length = 5 cm.}}$ Figured in head. Area = length x width = 60 cm^2
5 cm x 12 cm = 60 cm^2

25. A 16-foot long piece of wire is cut into two smaller pieces. One piece is 2 feet longer than the other. What are the lengths of the pieces?



$x+x+2=16$

$2x+2=16$

$2x+2-2=16-2$

$2x=14$ $\quad \frac{2x}{2}=\frac{14}{2}$ $\quad \boxed{x=7\text{ ft},\ x+2=9\text{ ft}}$

26. Central High School has 1020 students. There are 184 more girls than boys. How many girls are there?

CHS = B + (G) = 1020

B = B

G = B + 184

1020 = B + (B + 184)

1020 = 2B + 184

1020 − 184 = 2B + 184 − 184

836 = 2B

$\frac{836}{2} = \frac{2B}{2}$

$\boxed{418 = B \quad G = 418 + 184 = 602}$

Using the domain of x to be {0, 1, 2, 3, 4, 5, 6, 7}, determine which value(s) of x in the domain will make the expression true. Show all work. Box your final answer.

Example: 8x = 64

8(8) = 64 8 is not a number in the domain, therefore $\boxed{\text{x = no numbers in domain.}}$

27. x + 7 = 12 (5) + 7 = 12 $\boxed{x = 5}$	28. 3x − 4 = 17 3x − 4 + 4 = 17 + 4 3x = 21 3(7) = 21 $\boxed{x = 7}$
29. 8x = 48 8(6) = 48 $\boxed{x = 6}$	30. 3x + 2 = x + 6 3x − x + 2 = x − x + 6 2x + 2 − 2 = 6 − 2 2x = 4 2(2) = 4 $\boxed{x = 2}$
31. x + 1 = 3 (2) + 1 = 3 $\boxed{x = 2}$	32. x ÷ 2 = 2 (4) ÷ 2 = 2 $\boxed{x = 4}$
33. (x-5)(x-2) = 0 x − 5 = 0 or x − 2 = 0 (5) − 5 = 0 (2) − 2 = 0 $\boxed{x = 5 \text{ or } x = 2}$	34. 9x = x · 9 $\boxed{\text{x = all \#s in domain}}$
35. x · x = 16 (4)(4) = 16 $\boxed{x = 4}$	36. 11 + 4x = 23 11 − 11 + 4x = 23 − 11 4x = 22 $x = \frac{22}{4}$ so $\boxed{\text{x = no \# in domain}}$

HW Assigned 8/22/17
Due 8/23/17

1. Five steps down $\boxed{\begin{array}{c}-5\\ \text{opp. } 5\end{array}}$

4. Nine degrees below freezing (0°C)

$\boxed{\begin{array}{c}-9°C\\ \text{opp } 9°C\end{array}}$

7. 15 km west $\boxed{\begin{array}{c}-15km\\ \text{opp. } 15km\end{array}}$

10. A bank withdrawl of \$25

$\boxed{\begin{array}{c}-\$25\\ \text{opp } \$25\end{array}}$

13. A loss of \$50 $\boxed{\begin{array}{c}-\$50\\ \text{opp. } \$50\end{array}}$

Translate into symbols

16. Negative eleven is less than negative one.

$\boxed{-11 < -1}$

19. Six is less than six and five tenths.

$\boxed{6 < 6\frac{5}{10}}$

22. One eighth is less than one seventh

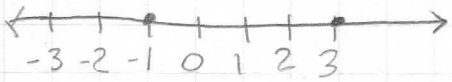
$\frac{1}{8} < \frac{1}{7}$

25. $\boxed{S, F}$

28. $\boxed{H, D, B,}$

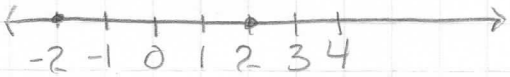
State two inequalities. One with > and one with <.

31.



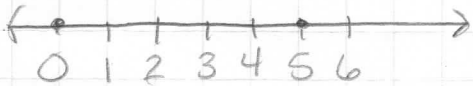
$\boxed{\begin{array}{c}-1 < 3\\ 3 > -1\end{array}}$

34.



$\boxed{\begin{array}{c}-2 < 2\\ 2 > -2\end{array}}$

37.



$\boxed{\begin{array}{c}0 < 5\\ 5 > 0\end{array}}$

40. $\boxed{0 > -5}$

43. $\boxed{0 > -1}$

46. $\boxed{-\frac{2}{5} < -\frac{1}{5}}$

HW Assigned 8/23/17
Due 8/24/17

P

38-39

Simplify.

3. $-(13-13) = \boxed{0}$

6. $[-(-7)] + 1 = \boxed{8}$

9. $8 + |-3| = \boxed{11}$

12. $|2| + |-9| = \boxed{11}$

15. $|-0.7| + |-3.3| = \boxed{4}$

18. $\left|-\frac{3}{4}\right| - \left|\frac{1}{4}\right| = \frac{2}{4} = \boxed{\frac{1}{2}}$

21. $-(-8) > (-8)$

24. $|-15| > |-6|$

Translate into symbols

27. The absolute value of negative five is greater than two

$\boxed{|-5| > 2}$

30. The opposite of eight is less than the opposite of four

$\boxed{-8 < -4}$

Solve with the set of real numbers

33. $|t| = \frac{1}{2}$ $\boxed{t = \frac{1}{2}, -\frac{1}{2}}$

36. $|b| = -9$

No solution

Evaluate if $a = 1.5$, $b = -2$ and $c = -1.7$

39. $|a| + |b| =$

$|1.5| + |-2| = \boxed{3.5}$

42. $2|b| - |a| + |c| =$

$2|-2| - |1.5| + |-1.7| =$

$4 - 1.5 + 1.7 = \boxed{4.2}$

p 55-56 1-15 odd
18, 21, 22, 31+39 odd ; problems 1-7 odd

HW Assigned 8/24/17 Due 8/25/17

(1) $-7+6=\boxed{-1}$

(3) $-34+75=\boxed{41}$

(5) $148-72-73-31=$

$76-73-31$

$3-31=\boxed{-28}$

(7) $-12+7+(-14)+29=$

$-5-14+29=$

$-19+29=\boxed{10}$

(9) $109+(-56)+(-91)+26=$

$53+(-91)+26=$

$-38+26=\boxed{-12}$

(11) $-[24+(-5)]+[-(-2+6)]=$

$-[19]+[-(4)]=\boxed{-23}$

(13) $3.7+4.2+(-2.3)+0+6.4+12.8=$

$7.9+(-2.3)+6.4+12.8=$

$5.6+6.4+12.8=$

$12+12.8=\boxed{24.8}$

(15) $27+43+(-14)+(-57)+5+(-36)+(-14)=$

$70+(-14)+(-57)+5+(-36)+(-14)=$

$56+(-57)+5+(-36)+(-14)=$

$-1+5+(-36)+(-14)=$

$4+(-36)+(-14)=$

$-32+(-14)=\boxed{-46}$

(18) $\frac{3}{2}+\left(-\frac{5}{2}\right)+\left(-\frac{7}{2}\right)=$

$\left(\frac{6}{2}\right)+\left(-\frac{5}{2}\right)+\left(-\frac{7}{2}\right)=$

$-\frac{6}{2}=\boxed{-3}$

(21) $-\frac{7}{8}+\left(-\frac{11}{8}\right)=-\frac{18}{8}=\boxed{-\frac{9}{4}}$

(22) $\frac{16}{3}+\left(-\frac{10}{3}\right)=\frac{6}{3}=\boxed{2}$

Evaluate each expression if $x=-3$, $y=6$, and $z=-4$

(31) $x+y+(-1)=$

$-3+6+(-1)=\boxed{2}$

(33) $-15+(-x)+y=$

$-15+(3)+6=\boxed{-6}$

(35) $1+(-y)+z=$

$1+(-6)+(-4)=\boxed{-9}$

(37) $|x+y+z|=$

$|-3+6+(-4)|=$

$|-1|=\boxed{1}$

(39) $-|x+z+(-8)|=$

$-|-3+(-4)+(-8)|=$

$-|-15|=\boxed{-15}$

(7) $32-27+28-31+12-18+16-25$

$5+28-31+12-18+16-25$

$33-31+12-18+16-25$

$2+12-18+16-25$

$14-18+16-25$

$-4+16-25$

$-12-25=\boxed{-13}$

1. $18-7+9=\boxed{20}$

3. $784+96-18-44=$

$880-18-44=$

$862-44=\boxed{818}$

5. $698-250-1684-1316+3700=$

$448-1684-1316+3700$

$-1236-1316+3700$

$-2552+3700=\boxed{1148}$