Ch. 1 Practice **Name**_____
Math 90 **Day or section** _____

1. Write the numerical expression that is equivalent to the English phrase and then simplify. The difference of 6 and 2 is 4.

2. Translate into symbols: The sum of 3a and 4b is less than their difference.

3. Simplify: $2^3 + 3(2 - 20 + 4)$

4. Simplify: $9 - 6 \div 2 + 2 \cdot 3$

5. Name the opposite, reciprocal, and absolute value. $-\frac{1}{3}$

6. Add: -2 + (-7)

7. Add: |-12 + (-2)| + |-2 + 6|

8. Subtract: -8 – 3

9. Subtract: 7 – (4 – 2) – 1

10. State the property that justifies the following: 2(3x + 4) = 6x + 8

11. State the property that justifies the following: 2+(a+b) = (a+b)+2

12. State the property that justifies the following: 6 + 0 = 6

13. State the property that justifies the following: 2 + (-2) = 0

14. Apply only the associative property to rewrite: 4 + (7 + 3x)

15. Apply only the associative property to rewrite: -3(-4a)

16. Apply the distributive property: $\frac{1}{3}(9 + 6x)$

17. Apply the distributive property: $-\frac{1}{4}(4x - 3)$

18. Multiply: -6(5)(-3)

19. For the set $\{-2, -\sqrt{2}, -1, 0, \sqrt{3}, \sqrt{4}, 7\}$ list all of the irrational numbers.

20. For the set $\{-2, -\sqrt{2}, -1, 0, \sqrt{3}, \sqrt{4}, 7\}$ list all of the integers.

21 – 24 Simplify the problems

21. 12 – 7 – 2 – (-3)

22. $5(3 - 7)^2 - 2(4 - 6)^3$

23. –3 + 5[4 – 3(-4 – 7)]

24. $7 - \left[\frac{7(-3)+5}{4(-3)+2(4)}\right]$

25. Combine: $\frac{7}{60} + \frac{25}{84}$

26. Multiply: $\left(-\frac{1}{2}\right)^3$

27. Simplify: 2 - |-4|

28. Multiply: $\frac{3}{5} \cdot \frac{8}{9} \cdot 10$

29. Factor into primes: 126

30. Factor into primes: 360

Answers

1. 6 – 2 = 4 ***2.*** 3a + 4b < 3a – 4b ***3.*** -34 ***4.*** 12 ***5.*** $\frac{1}{3}; -3; \frac{1}{3}$

6. –9 ***7.*** 18 ***8.*** –11 ***9.*** 4 ***10.*** Distributive

11. Commu. Prop. ***12.*** Additive Identity ***13.*** Additive Inverse ***14.*** (4 + 7) + 3x

15. (-3•-4)a ***16.*** 3 + 2x ***17.*** –x + ¾ ***18.*** 90 ***19.*** $-\sqrt{2}, \sqrt{3}$ ***20.*** –2, -1, 0, $\sqrt{4}$, 7

21. 6 ***22.*** 96 ***23.*** 182 ***24.*** 3 ***25.*** 29/70 ***26.*** –1/8

27. –2 ***28.*** 16/3 ***29.*** $2 \cdot 3^2 \cdot 7$ ***30.*** $2^3 \cdot 3^2 \cdot 5$