

**COBURN MATH 120**  
**REVIEW #1 (Review sections and Chapter 1)**

**Solve each equation.**

1.  $4(x+3)-3=2(4-3x)-4$

2.  $\frac{4}{5}(n-10)=-\frac{8}{9}$

3.  $\frac{n}{5}-2=2-\frac{5}{3}-\frac{4}{15}n$

4.  $7.9-2.6w=1.5w-(9.1+2.1w)$

5.  $-2|3x+1|=-12$

6.  $-3|2y-7|=18$

7.  $-2x^3+4x^2=50x-100$

8.  $x^2-18x+77=0$

9.  $5x(x-10)(x+1)=0$

10.  $(3x-4)^2=12$

11.  $x^2+6x=3$

12.  $x^2-2x+10=0$

13.  $\frac{18}{x}=\frac{10}{x-4}$

14.  $\frac{6}{x}+\frac{8}{x+5}=3$

15.  $6p^2+9p=0$

16.  $\frac{10}{x-5}+x=1+\frac{2x}{x-5}$

17.  $x^6-3x^4-16x^2+48=0$

18.  $\sqrt{x-2}-8=0$

19.  $\sqrt{2v-3}+3=v$

20.  $\sqrt[3]{x^2-9}+\sqrt[3]{x-11}=0$

21.  $3x^2+1=0$

**Solve the inequality. Write answers in interval notation.**

22.  $9x - 8 \leq 7x + 16$

23.  $-5(x + 2) - 3 < 3x + 1$

24.  $9(w - 1) - 3w \geq -2(5 - 3w) + 1$

25.  $-3x + 5 > 17$  and  $5x \leq 0$

26.  $-3(x + 2) > 15$  or  $x - 3 \leq -1$

27.  $2 < 3x - 4 \leq 19$

28.  $|m - 1| > 5$

29.  $3|7 + 2k| - 11 < 10$

30.  $|5x - 7| + 4 < 0$

31.  $-4|2y - 9| - 8 \leq 0$

**Perform the operation and write the results in standard form.**

32.  $(3 + 9i) + (-7 - 6i)$

33.  $(-2 + 13i) - (8 - 11i)$

34.  $(6 + 5i)(-2 + 3i)$

35.  $\frac{6 + i}{4 - i}$

## ANSWERS TO REVIEW #1

1.  $x = -\frac{1}{2}$

2.  $n = \frac{80}{9}$

3.  $n = 5$

4.  $w = \frac{17}{2}$

5.  $x = -\frac{7}{3}, \frac{5}{3}$

6. No solution

7.  $x = 2, \pm 5i$

8.  $x = 7, 11$

9.  $x = -1, 0, 10$

10.  $x = \frac{4 \pm 2\sqrt{3}}{3}$

11.  $x = -3 \pm 2\sqrt{3}$

12.  $x = 1 \pm 3i$

13.  $x = 9$

14.  $x = -\frac{10}{3}, 3$

15.  $p = -\frac{3}{2}, 0$

16.  $x = 3$

17.  $x = \pm 2, \pm 2i, \pm \sqrt{3}$

18.  $x = 66$

19.  $v = 6$

20.  $x = -5, 4$

21.  $x = \frac{\pm i\sqrt{3}}{3}$

22.  $(-\infty, 12]$

23.  $\left(-\frac{7}{4}, \infty\right)$

24.  $(-\infty, \infty)$

25.  $(-\infty, -4)$

26.  $(-\infty, 2]$

27.  $\left[2, \frac{23}{3}\right]$

28.  $(-\infty, -4) \cup (6, \infty)$

29.  $(-7, 0)$

30. No solution

31.  $(-\infty, \infty)$

32.  $-4 + 3i$

33.  $-10 + 24i$

34.  $-27 + 8i$

35.  $\frac{23}{17} + \frac{10}{17}i$