

SID: _____

Name: _____

Instructions. (40 points) Write out the solutions to the following problems in the space provided below. This assignment covers problems from Sections 1.1-1.3 of the text. Work must be shown to receive credit. Solutions will be graded on mathematical accuracy as well as notation. See the written guidelines in the syllabus. When you are finished upload your finished assignment in Gradescope.

(8^{pts}) **1. Solve the following linear equations.**

(a) (2 pts) $4t + 9 = 4(t + 5) - 14$

(c) (2 pts) $0.7w + 3 = 2.2w$

(b) (2 pts) $\frac{7}{11}(y - 1) - \frac{37}{11} = -4$

(d) (2 pts) $\frac{5x - 5}{2} + \frac{7}{4} = \frac{10x + 7}{4}$

(3^{pts}) **2. Set up an equation and solve:**

Find 3 consecutive integers whose sum is 579.

(6^{pts}) **3.** Solve the following absolute value equations.

(a) (2 pts) $|14z + 4| + 4 = 2$

(c) (2 pts) $\left|y + \frac{1}{7}\right| = \left|y - \frac{4}{7}\right|$

(b) (2 pts) $|5y - 5| = |4y + 7|$

(3^{pts}) **4. Set up an equation and solve:**

Two trucks leave a warehouse at the same time. One travels due west at an average of 58 miles per hour, and the other travels due east at an average of 65 miles per hour. After how many hours will the two trucks be 369 miles apart?

(2^{pts}) **5.** Solve the equation $A = \frac{1}{2}(B + b)h$ for the variable b .

(3^{pts}) **6. Set up an equation and solve:**

Two brothers, Kevin and Brian, each inherit \$24000. Kevin invests his inheritance in a savings account with an annual return of 2.2%, while Brian invests his inheritance in a CD paying 5.4% annually. How much more money than Kevin does Brian have after 1 year?

(2^{pts}) **7.** Solve the following inequality. Give your answer in interval notation.
 $4|z + 2| < 20$

(3^{pts}) **8. Set up an equation and solve:**

Bob's meal at the Sun Bistro cost \$12.75, not including the tip. If Bob decides to leave a 11% tip, how much should he pay? Round your answer to the nearest cent.

- (2^{pts}) **9. Solve the following inequality. Give your answer in interval notation.**
 $-5(t - 3) \leq 35$ and $10 + t < 13$

- (3^{pts}) **10. Set up an equation and solve:**
Find 3 consecutive odd integers whose sum is 555.

- (2^{pts}) **11. Give the solution in interval notation and give a sketch of the graph.**
 $4z - 10.4 < -7.8 + 3z$

- (3^{pts}) **12. Set up an equation and solve:**
Without shipping, a keyboard costs \$27.91 from a particular online dealer. If Bob paid \$32.69 for the keyboard including the shipping, how much did the shipping cost?