

Cumulative Test 15A

1. (63) Casey bought 20 pens, some ballpoint and some felt-tipped. Ballpoint pens cost \$0.49 each and felt-tipped pens cost \$0.95 each. If Casey spent \$13.48 on pens, how many felt-tipped pens did he buy?

2. (71) Use the data in the table to make a scatter plot. Draw a trend line on the scatter plot. Find an equation for the trend line.

x	1	2	3	4	5	6
y	5	8	9	10	13	16

Simplify problems 3–6.

3. (61) $\sqrt{25a^3b^4}$

4. (40) $(6a^4b^2)^2$

5. (39) $\frac{a^3}{b^2} \left(\frac{b^4}{a} + \frac{3b^3}{a^2} \right)$

6. (46) $\sqrt{\frac{4}{121}}$

7. (73) Write a compound inequality that represents all real numbers that are greater than 2 and less than 5. Graph the solution.

8. (65) Determine whether the lines passing through the following points are perpendicular.

Line 1: (1, 4) and (−2, 5)

Line 2: (5, 4) and (3, −2)

Explain your reasoning.

Factor the trinomials in problems 9–10.

9. (72) $x^2 + 2x - 8$

10. (75) $3x^2 + 11x + 6$

11. (45) The Ortiz family is renting a hotel room for 3 days. They can spend \$400 at most. There is a service fee of \$25. What can they spend at most on the per day rental fee including the \$25 service fee?

12. (43) Determine the value for which the expression $\frac{(n-1)(n+5)}{3n-6}$ is undefined.

13. (67) Solve the system of equations below.

$$y = \frac{1}{2}x - 6$$

$$2x - 4y = 20$$

14. (34) Determine whether the sequence below is an arithmetic sequence.

-7, -1, 5, 11, ...

If yes, find the common difference and the next two terms.

15. (47) A toy store marks up the price of train sets they purchase at \$25.00 each by 25%. What is the markup and new price of each train set?

16. (74) Solve the equation $|x| = 5$.

17. (60) A scarf is in the shape of a rectangle. It has a length of $(a + 2)$ inches and a width of $(a - 2)$ inches. What is the area of the scarf?

18. (57) Find the LCM of 6, 8, and 10.

Solve the inequalities in problems 19–20 and graph them on a number line.

19. (70) $-2a \leq -8$

20. (66) $x + 6 > 4$