

**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

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

8. (69) 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. (79)  $3x^2 + 11x + 6$

11. (46) 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. (49) 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. (64) 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. (67) 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)  $x + 6 > 4$

**Simplify problems 3-6.**

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

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

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

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

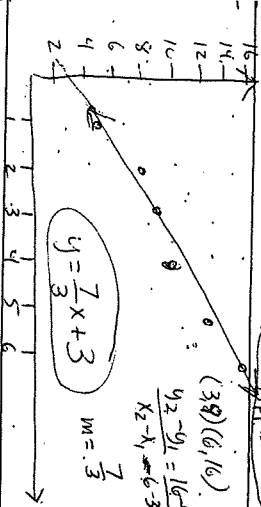
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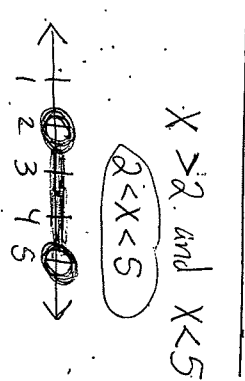
$B + F = 20$   
 $49B + 95F = 13248$   
 $-49B - 49F = -9800$   
 $\frac{46}{46} F = 368$   
 $F = 8$   
 $B = 12$

8 felt  
Hesped Pens



$\sqrt{\frac{4}{121}} = \frac{\sqrt{4}}{\sqrt{121}} = \frac{2}{11}$

4  
121



Line 1:  $\frac{y_2 - y_1}{x_2 - x_1} = \frac{5 - 4}{2 - 1} = \frac{1}{3}$   
 Line 2:  $\frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 4}{-3 - 5} = \frac{-6}{-8} = \frac{3}{4}$   
 Yes, they are perpendicular because they have negative reciprocal slopes.

$x^2 + 2x - 8$   
 $(x + 4)(x - 2)$   
 mult to -8  
 adds to +2

$3x^2 + 11x + 6$   
 $(3x + 2)(x + 3)$   
 mult to 6  
 adds to 11

$3x + 25 \leq 400$   
 $3x \leq 375$   
 $x \leq 125$

\$125 per day

(n-1)/(n+5) # undefined means denominator = 0.  
 $3n - 6 = 0$   
 $3n = 6$   
 $n = 2$   
 IF n=2, then this is undefined.

No Solution  
 Lines are Parallel  
 $y = 1/2x - 6$   
 $2x - 4y = 20$   
 $2x - 4(1/2x - 6) = 20$   
 $2x - 2x + 24 = 20$   
 $24 \neq 20$

Yes, it's an arithmetic sequence.  
 Common difference = 6  
 Next 2 terms = 17, 23

$25x + 25 = 6.25 \text{ mark-up}$   
 $25 + 6.25 = 31.25 \text{ new price}$

$|x| = 5$   
 $x = 5, -5$

$(a+2)$  in.  $A = (a+2)(a-2)$   
 $A = a^2 - 2a + 2a - 4$   
 $A = a^2 - 4$  in.<sup>2</sup>

LCM of 6, 8, 10  
 $2 \cdot 3 \cdot 4 \cdot 5 = 120$

$a \geq \frac{8}{2}$   
 $a \geq 4$   
 Flip symbol!

