Winter Break Algebra 2 Work: ANSWERS

Sec 1-3 Both Honors Alg 2 and Alg 2A

1. $h = \frac{3V}{\pi r^2}$ 2. $r = \frac{S-L}{-L}$ *or* $-\frac{S}{L}+1$ 3. $w = \frac{s-lh}{l+h}$

4. $x = \frac{9G}{4} - 3$; No restrictions 5. $x = \frac{-ac-bc}{a-b}$; $a-b \neq 0$ 6. $x = t^3 - 3$; $t \neq 0$

7. The brothers saved $20 & $35 8. Sides of the triangle are 2.5", 6", 6.5"

9. #'s are 41, 42, 43 10. $x = 0$ 11. $u = 7.5$

Sec 1-4 Both Honors Alg 2 and Alg 2A

1. $t \geq -5$ 5. $x > -8$ 10. $-3 \leq x \leq 2$ 11. $x \leq 2$ or $x > 8$ 17. $-1 \leq x \leq 2$

Sec 1-5 Both Honors Alg 2 and Alg 2A

8. $x \leq \frac{-2}{3}$ or $x \geq 2$ 9. $-\frac{3}{2} \leq b \leq \frac{1}{2}$ 19. No Sol 22. $x = -4, 2$ 23. $x = \frac{1}{2}$ ($-\frac{9}{8}$ is an extraneous sol)

Sec 2-2 Both Honors Alg 2 and Alg 2A

9. $y - 1 = -\frac{1}{3}x$ or $y = -\frac{1}{3}(x-3)$ 11. $y + 2 = 2(x+3)$ or $y - 6 = 2(x-1)$

22. $y - 3 = 2(x+1)$ or $y = 2x + 5$ 23. $y - 2 = \frac{5}{3}(x-2)$

24. $x = 4$ 25. $y = 1$

Sec 2-3 Alg 2A only

12. Not Direct Variation

For 13 and 14 you still need to find the value of the variation constant and write an equation.

13. Yes, it's Direct Variation. 14. Yes, it's Direct Variation.

14. Not Direct Variation

16. $y = \frac{1}{3}x$ 17. $y = -6x$

For 26-29 you can use either a proportion or a direct variation equation.

26. $x = 11$ 27. $y = \frac{5}{34} \approx 0.147$ 28. 22 minutes 29. 46.08 inches

Sec 2-6 Alg 2A only

7. $y = |x+2| + 1$ 8. $y = |x-4|$ 9. $y = -|x-1| + 3$

19. $y = 3|x| - 4$ 20. $y = \frac{1}{2}|x-2|$ 21. $y = 2|x+3| - 1$

Sec 3-2 Both Honors Alg 2 and Alg 2A

10. 3 sold out performances to break even.

20. Oranges cost $0.50 each and Grapefruit cost $0.60 each

21. $(1, 4)$ 23. $(0, 3)$ 24. $(1, -2)$ 26. $(-4, 5)$

Sec 3-6 Alg 2A only

1. Many Solutions 6. $(4, 1, 3)$

Sec 3-4 Hon Alg 2A only You must show the system of inequalities and the graph.

4 qts of extra rich and 10qts will make a maximum profit of $132

Sec 5-3 Hon Alg 2A only

1. a) $y = 3(x-5)^2 - 8$ b) $y = -\frac{1}{2}(x+6)^2 + 2$

Sec 5-5 Hon Alg 2A only

2. a) $x = \frac{1}{2}, \frac{1}{4}$ b) $x = -6 \pm 2\sqrt{3}$ c) $x = 3 \pm 4i\sqrt{2}$

d) Original Equation should have been: $12x^2 + 16x = 28, \quad x = -\frac{7}{3}, 1$

Sec 5-7 Hon Alg 2A only

3. a) $x = 4 \pm \sqrt{13}$ b) $x = -3 \pm 2i\sqrt{6}$ c) $x = -5 \pm 4i\sqrt{3}$