Math Packet, week 2, optional (but important) work

Parents:	Padres:	Students:
Thank you for supporting your student's learning - we appreciate you. Encourage your student to do as much of this work as they can. Reassure them that it can be normal to get stuck on a math problem and to keep trying; that is how we learn. While this work is optional and not graded you may decide that it is mandatory in your house. If you want to check that they did the work, here is a teacher tip. **Don't just ask to see the paperwork completed. Choose two or three problems and ask them to teach you how to do it.** Not only will this help you check if they understand, but explaining it to you also helps them learn it better.	(lo siento, esto es del traductor de google) Gracias por apoyar el aprendizaje de su hijo. Le agradecemos. Anime a su estudiante a hacer todo el trabajo que pueda. Asegúreles que puede ser normal quedarse atrapado en un problema matemático y seguir intentándolo; Así es como aprendemos. Si bien este trabajo es opcional y no está calificado, puede decidir que es obligatorio en su casa. Si desea verificar que hicieron el trabajo, aquí hay un consejo para el maestro. **No solo pida ver la documentación completa. Elija dos o tres problemas y pídales que le enseñen cómo hacerlo.** Esto no solo lo ayudará a verificar si entienden, sino que si se lo explica, también les ayudará a aprenderlo mejor.	First, we miss you. We know that time off of school may seem pretty awesome at first, but keeping your brain learning is important. Think of this math as exercise for your brain. Math is in the news everywhere lately and it is important to learn these skills so that you are an informed citizen and math will open opportunities for your future educational and career goals. Try your best. The good news is that grading pressure is off; this is all about learning and understanding the math. Remember, if your parents are making you do this it is because they care about your education.

- Key search terms are included in many of the directions so that if you have internet access you can search for videos to help provide examples.
- Answer keys for this work will be provided in next week's packet

We are here for you. Email us if you need any support

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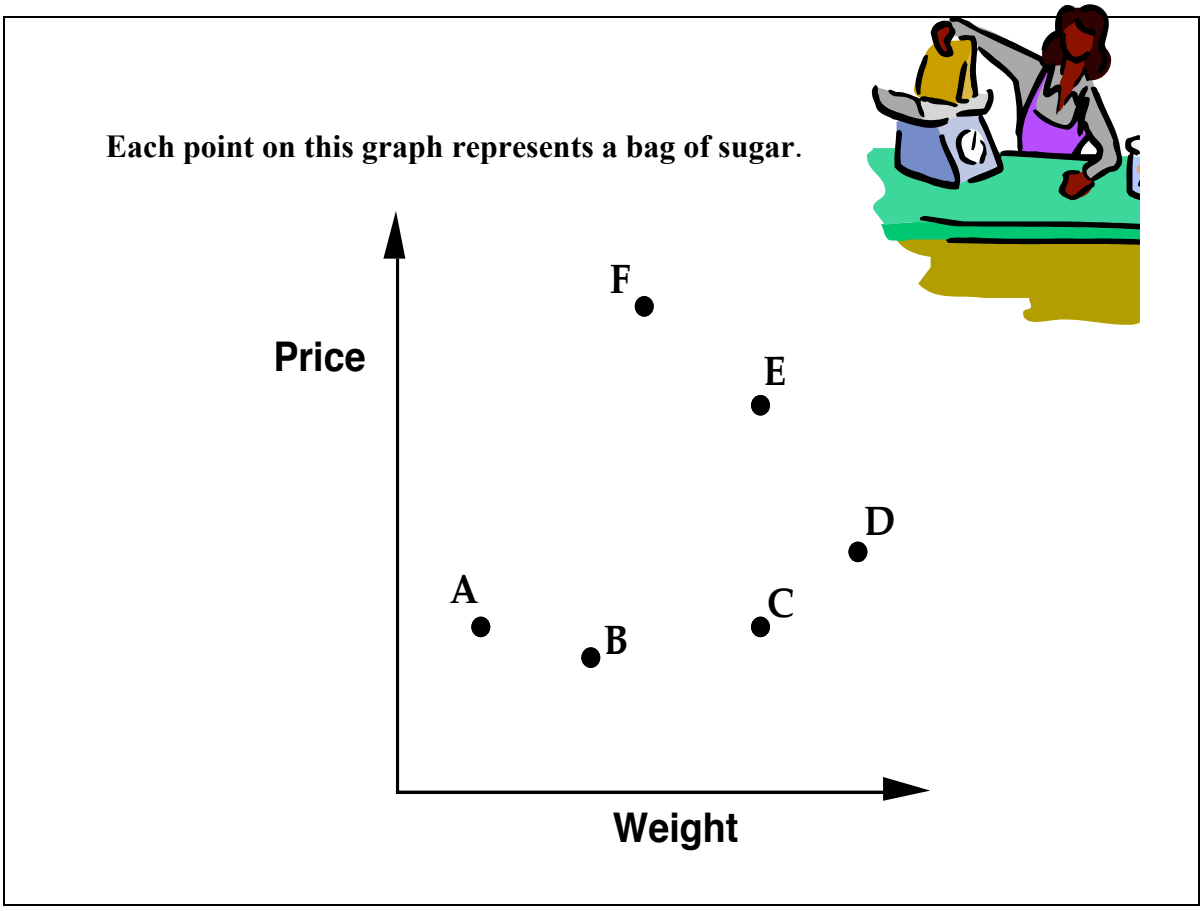
Sugar Prices



1. Which point shows the heaviest bag? _____

2. Which point shows the cheapest bag? _____

3. Which points show bags with the same weight? _____

4. Which points show bags with the same price? _____

5. Which of F or C gives the best value for money? _____
   How can you tell?

_____

_____

week 2 algebra review skills

Date_____ Period____

Solve each equation. (Note: this will help with essential skills quiz logs and exponentials)

1) $60(x - 20) = 272 + 37x$

2) $-62 - 51x = 50 - 4(41 + 13x)$

3) $12p - 120 = -60(59p + 2)$

4) $-49(a - 71) = 75 - 3a$

5) $42n + 21 = 21(1 + 2n)$

6) $-250 - 44n = -11(4n + 21)$

7) $-64(52 + 18x) = 75x + 353$

8) $6(4 + 23n) - 21 = 3 - 62n$

9) $-6(v + 50) = -311 - 6v$

10) $2(-57 - 59x) = 82 - 20x$

11) $7(27k - 25) = -359 + 5k$

12) $318 - 6b = -6(b - 68) - 70$

Simplify. Your answer should contain only positive exponents.

13) $(3u^4v^0)^2$

14) $(4u^{-3}v^4)^4$

15) $(4y)^4$

16) $(4xy^{-3})^2$

17) $(3xy)^4$

18) $(3x^2y^3)^{-1}$

Algebra 2 Name_____ ID: 1

week 2: solving simple log problems

Date_____ Period____

Solve each equation. (essential skills question)

1) $\log_7 (3k + 2) = \log_7 (2k + 2)$

2) $\log_{18} (x - 2) = \log_{18} 13$

3) $\log -2x = \log 2x$

4) $\log_{19} (-4a - 1) = \log_{19} (2a + 6)$

5) $\log_{18} -2n = \log_{18} 12$

6) $\log_{13} n = \log_{13} (-n + 10)$

7) $\log_{19} (-5p - 9) = \log_{19} (-3p - 4)$

8) $\log_3 (-4v + 7) = \log_3 (-2v - 3)$

9) $\log_7 (2p + 8) = \log_7 (3p + 6)$

10) $\log_{18} (5r + 6) = \log_{18} (6 - 4r)$

11) $\log_{20} (-5v + 5) = \log_{20} (-3v + 5)$

12) $\log_{18} (2a + 5) = \log_{18} (-2a - 7)$

Solve each equation. (essential skills questions)

13) $\log_{12} (-2p - 7) + 4 = 3$

14) $\log (-8x - 1) + 5 = 7$

15) $\log_7 (-7x - 10) - 5 = -5$

16) $3 \log_9 (-6a + 5) = 12$

17) $-9 + \log_{12} (6 - 3r) = -8$

18) $5 + \log_9 (9b + 9) = 5$

19) $4 + \log_5 (2n + 10) = 8$

20) $5 \log_5 (8b + 3) = -10$

21) $\log_{12} (-v + 8) + 3 = 4$

22) $4 \log_5 (4x + 8) = 0$

23) $\log_9 (-3x - 10) + 3 = 3$

24) $\log_{12} (-3n + 4) - 3 = -2$

Optional Work

Simplify. Key search terms: simplify radicals

1) $\sqrt{96}$

2) $\sqrt{200}$

3) $\sqrt{45}$

4) $\sqrt{900}$

5) $\sqrt{16}$

6) $\sqrt{128}$

Solve each equation by factoring. Key search terms: Factor quadratic equations, zero product property

7) $n^2 - 4n + 4 = 0$

8) $n^2 + n - 6 = 0$

9) $n^2 - 4n = 0$

10) $x^2 - 3x - 70 = 0$

11) $k^2 - k = 0$

12) $x^2 - 2x - 35 = 0$

Solve each equation with the quadratic formula. Key search terms: quadratic formula

13) $10a^2 + 5a - 11 = 0$

14) $4x^2 + 6x - 70 = 0$

15) $2x^2 - 2x - 60 = 0$

16) $x^2 - 4x - 9 = 0$

17) $2m^2 - 7m - 6 = 0$

18) $12n^2 + 9n - 15 = 0$

Optional Work

Simplify. Key search terms: simplify radicals

1) $\sqrt{96}$

$4\sqrt{6}$

2) $\sqrt{200}$

$10\sqrt{2}$

3) $\sqrt{45}$

$3\sqrt{5}$

4) $\sqrt{900}$

30

5) $\sqrt{16}$

4

6) $\sqrt{128}$

$8\sqrt{2}$

Solve each equation by factoring. Key search terms: Factor quadratic equations, zero product property

7) $n^2 - 4n + 4 = 0$

$\{2\}$

8) $n^2 + n - 6 = 0$

$\{-3, 2\}$

9) $n^2 - 4n = 0$

$\{4, 0\}$

10) $x^2 - 3x - 70 = 0$

$\{-7, 10\}$

11) $k^2 - k = 0$

$\{1, 0\}$

12) $x^2 - 2x - 35 = 0$

$\{7, -5\}$

Solve each equation with the quadratic formula. Key search terms: quadratic formula

13) $10a^2 + 5a - 11 = 0$

$\left\{\frac{-5 + \sqrt{465}}{20}, \frac{-5 - \sqrt{465}}{20}\right\}$

14) $4x^2 + 6x - 70 = 0$

$\left\{3\frac{1}{2}, -5\right\}$

15) $2x^2 - 2x - 60 = 0$

$\{6, -5\}$

16) $x^2 - 4x - 9 = 0$

$\{2 + \sqrt{13}, 2 - \sqrt{13}\}$

17) $2m^2 - 7m - 6 = 0$

$\left\{\frac{7 + \sqrt{97}}{4}, \frac{7 - \sqrt{97}}{4}\right\}$

18) $12n^2 + 9n - 15 = 0$

$\left\{\frac{-3 + \sqrt{89}}{8}, \frac{-3 - \sqrt{89}}{8}\right\}$

	Fruit Boxes	Rubric	
		Points	Section points
1.	The dimensions of the box are (4”) x 28” x 14” Award 1 point for each of 28” and 14”.	2 x 1	
	The volume is therefore 1568 inches^3 (follow-through)	1	3
	Uses a logical, sensible approach such as; Tries 3”, then 5”, sees that 5” gives a bigger answer, so tries 6”, 7” etc.	2	
	Partial credit: if method unclear, but apparently correct.	(1)	
	Correct calculations of volume between height = 5” and height = 7”		
	height width depth volume 5 26 13 1690 6 24 12 1728 7 22 11 1694	3	
	This suggests that the maximum volume occurs at or near height = 6” and is 1728 inches^3	1	
	Any attempt to justify why it is exactly 6” (e.g. tries 5.9 and 6.1 or draws a graph)	1	
	Alternative method May find maximum value by differentiation	or 7	7
	Total Points		**10**

	A Golden Crown?	Rubric	
		Points	Section points
1	Shows correct reasoning and correct calculations such as: **No** because either: Mass of crown is 1.8kg, and 1.8kg of pure gold has volume 90 cm^3 not 125 cm^3 **or** Volume of crown is 125 cm^3 and this would have mass of 2.5 kg if it was pure gold. *Partial credit* 2 points for reasoning which is correct but incomplete.	3 (2)	3
2.	May solve algebraically If there is x kg gold and y kg of silver, then: $x + y = 1.8$ $50x + 100y = 125$ Solving these two equations, we find $\boldsymbol{y = 0.7}$ (and $x = 1.1$) **0.7 kg of silver** (and 1.1 kg of gold). Alternatively: Any systematic correct method leading to a correct solution (4 points). Systematic correct method leading to incorrect solution (3 points). Trial and error method leading to a correct solution (3 points). Trial and error method leading to incorrect solution (1 points).	1 1 1 4 or (7)	7
	Total Points		**10**