Math 2008
Unit III Practice Test (Chapters 4-6) **Solutions Key**

1.

-6	8	-2
4	0	-4
2	-8	6

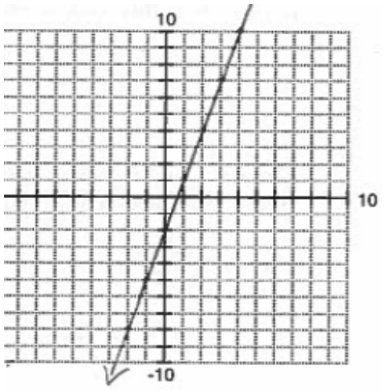
2. (a) C = 60h + 35 (b) T = -2t + 54

3. (a) {(0, -2),(1, 1), (2, 4), (3, 7), (4, 10), (5, 3)}

(b)

x	0	1	2	3	4	5
y	-2	1	4	7	10	13

(c)



4. 70 ˚F 5. 0, 1, 2, 3, 4, 5, 6, 7 6. 20 ˚C

7. the number you started with.

Start with a number, n. 2(n + 17) = 2n + 34
2n + 34 – 4 = 2n + 30
2(2n + 30) = 4n + 60 + 20 = 4n + 80
Divide by 4 → n + 20 – 20 = n

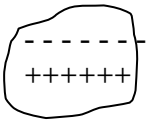
8. 7 Start with a number, n. 2n + 9 + n = 3n + 9
Divide by 3 → n + 3 + 4 = n + 7 – n = 7

9. x = 14 10. x = -4

11. (a) 2x(x – 6) (b) $x^2(x^2 + 18)$ (c) (x + 2)(x + 4)

12. (a) 3^{16} (b) 3^{10} (c) 3^{6}

13. 20 °F

14. 

-8 + 6 = -2

15. -5 + 2 + 6 + -8 = -5 loss of 5 yards

16.

3 · 5 = 15	Then start over with	3 · -5 = -15
3 · 4 = 12		2 · -5 = -10
3 · 3 = 9		1 · -5 = -5
3 · 2 = 6		0 · -5 = 0
3 · 1 = 3		-1 · -5 = 5
3 · 0 = 0		-2 · -5 = 10
3 · -1 = -3		-3 · -5 = 15
3 · -2 = -6		
3 · -3 = -9		
3 · -4 = -12		
3 · -5 = -15		

17. (a) -21 (b) 8 (c) -7

18. (a) ─ (b) +

19. (a) 25 (b) -4

20. (a) -40, 80 (b) -8, -16

21. (a) x = -8 (b) x = -33

22. (a) 1, 2, 3, 4, 6, 8, 12, 24 (b) 1, 2, 4, 5, 10, 20, 25, 50, 100

23. (a) C (b) P

24. (a) 8 (b) 5

25. Yes; Yes; Yes; Yes; No; Yes

26. (a) $2 \cdot 5^3$ (b) $2^3 \cdot 3^2 \cdot 5$ (c) $2^2 \cdot 3 \cdot 7$

27. 3(x + 4)(x – 4)

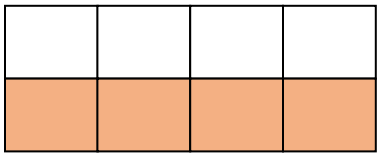
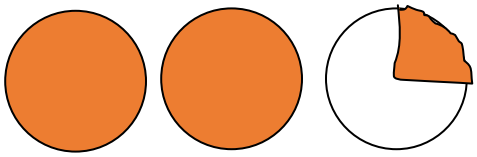
28. (a) 60 (b) 2

29. 2 packages of hot dogs; 3 packages of buns

30. (a) $2 \cdot 3^2 \cdot 5^3 \cdot 7^2$ (b) $2^2 \cdot 3^2 \cdot 5^4 \cdot 7^3 \cdot 11$

31. (a) True
(b) False. Let a = 10 and b = 20. LCM (a, b) = 10 ≠ 2
(c) False. 3 doesn't divide evenly into the sum of the digits for 654,980,321.
(d) True
(e) True

32. (a) $6xy^3z$ (b) $36\ x^2y^3z^2$ (c) $6xy^3z(2x - 3z)$ (d) $\dfrac{21z - 10x}{36x^2y^3z^2}$

33. (a)  (b) 

34. (a) $^{2}/_{6} = {}^{1}/_{3}$ (b) $^{1}/_{6}$

35. (a) $^{3}/_{10}$ (b) $7\ ^{3}/_{5}$ (c) $^{2}/_{3}$ (d) $^{21}/_{25}$ (e) $^{64}/_{125}$ (f) $4\ ^{3}/_{4}$

36. (a) < (b) < (c) <

37. (a) $8\ ^{11}/_{16}$ (b) $52\ ^{17}/_{20}$ (c) $^{29}/_{24}$ or $1\ ^{5}/_{24}$ (d) $^{60}/_{171}$ (f) $28\ ^{7}/_{10}$

38. 120 marbles

39. (a) ½ (b) $^{5}/_{24}$

40. (a) undefined (b) $\frac{5}{3}$

41. (a) 86 °F (b) -25 °C

42. (a) 124 packages (b) 1 ounce

43. 277 ½ pounds

44. $(2 + 1/2)(3 + 1/3) = 6 + {}^{2}/_{3} + {}^{3}/_{2} + {}^{1}/_{6} = 6 + {}^{4}/_{6} + {}^{9}/_{6} + {}^{1}/_{6} = 6 + {}^{14}/_{6} = 6 + 2 + {}^{2}/_{6} = 8 + {}^{2}/_{6} = 8\ {}^{1}/_{3} \neq 6\ {}^{1}/_{6}$

45. (a) (b) -1 (c) b

46. (a) 15 (b) 15 (c) 4

47. Answers will vary. Examples include: $^{31}/_{40}$, 0.79, 0.77, $^{39}/_{50}$

48. (a) 0 (b) undefined (c)1 (d) 12

49. 114 bags of fertilizer

50. (a) x = 3 (b) x = 3 (c) x = 4.5 or $^{9}/_{2}$

51. (a) $^{5}/_{4}$ or 1.25 (b) 2 ¾ (c) $4\ ^{1}/_{3}$

52. (a) $\frac{3ay^2 + b}{x^2 y^2}$ (b) $\frac{15 - 2y^2}{3xy^2}$

Do your best! Rise to the challenge! Live and learn!