

Math Warm-up

February 5, 2010

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By Dr. Li

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Name: (First) _____ (Last) _____

School: _____ Grade: _____

Time allowed: 90 min

Answer key will be provided when we resume the class next week.

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- **No calculator** should be used in the test.
- This booklet belongs to you.
- Show your work on this booklet.
- Turn in the last page (answer sheet) only.

1. $79 \div \square = 6 \text{ R } 1$, then $\square =$ _____.

Question set [5 - 7]

You might have learned that $2^3 = 2 \times 2 \times 2 = 8$, 2 is called base and 3 is called exponent.

5. Write in exponents: $5 \times 5 \times 5 \times 5 = 5^\square$

2. Alex and Brian are playing together. Alex has 10 more marbles than Brian. Brian has 20 marbles. How many marbles do they have together?

6. $2^5 =$

3. How many quarts are in a gallon?

- (A) 4
- (B) 6
- (C) 8
- (D) 16

7. $3^3 =$

4. The Incredible Growing Boy becomes 8 cm taller each year. If he is 1 m tall when he is 10 years old, how tall will he be when he is 16 years old? (Note: 1 m = 100 cm) _____ cm

8. On a field trip, the bus leaves at 9:30 A.M and arrives at the destination at 2:20 P.M. How long does the trip take?
- (A) 3 hr 30 min
 - (B) 4 hr 5 min
 - (C) 5 hr 40 min
 - (D) 4 hr 50 min

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9. You have only 10 quarters, 2 dimes, and 9 pennies. A set Pokemon cards asks for \$1.83. If you really wants it, you have to spend
- (A) 6 quarters, 0 dime and 8 pennies
 - (B) 7 quarters, 2 dime and 1 pennies
 - (C) 7 quarters, 0 dime and 8 pennies
 - (D) 8 quarters, 0 dime and 8 pennies

10. Nancy is 3 years older than Maria. Nine years later, Maria will turn 15. How old is Nancy 3 years ago?

13. If 8 players compete in a single-elimination tennis tournament, how many matches must be played to determine the champion?

14. Find the perimeter of a rectangle with length 10 inches and width 8 inches.



11. John has five adventure games in his collection. His cousin is one year older than he is and has twice as many. How many games does John's cousin have?
- (A) $5 \times 2 + 1$
 - (B) 6×2
 - (C) $1 + 3 + 5$
 - (D) 5×2

15. Phil ran in 3 races that lasted 12 minutes each. Then he ran in another race that lasted 14 minutes. For how many minutes in all did he run in races?

12. $2+2+2+2=$
- (A) 2×3
 - (B) 2×2
 - (C) 2^3
 - (D) $2 \times 2 \times 2 \times 2$

16. To estimate the sum of 4,215 and 6,957 to the nearest thousand, you should add
- (A) 5,000 and 7,000
 - (B) 4,000 and 7,000
 - (C) 4,000 and 6,000
 - (D) 5,000 and 5,000

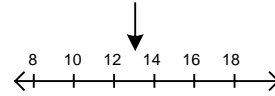
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17. three halves of 24 =
 (A) 12
 (B) 24
 (C) 30
 (D) 36

21. $5\frac{1}{8} + 2\frac{1}{2}$

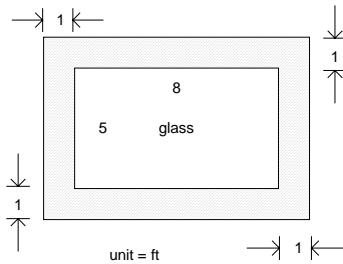
18. There are 20 rose bushes. Each has 8 roses on it. How many roses are there?
 (A) 120
 (B) 150
 (C) 180
 (D) 160

22. Which number is the arrow pointing to on the number line?



- (A) 11
 (B) 12
 (C) 15
 (D) 13

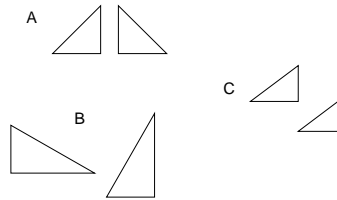
19. A rectangular table is covered by a piece of glass. The dimensions of the glass are specified as below. Find the area of the table.



23. The price of 2 lb 8 oz of chestnuts is \$4, how much does one ounce of chestnut cost?
 (Hint: 1 lb = 16 oz.)

20. If you flipped a coin 100 times, how many times would you expect it to come up heads?

24. Tell what kind of move (slide, flip, or turn) each drawing represents.



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25. In four months, Margaret's brother Tim will be one year old. How old is Tim now?
(A) five months
(B) seven months
(C) six months
(D) eight months
26. Tom's math score on midterm is 80. His final score is 10 points higher. What is his average in the two tests?
27. The temperatures in Fahrenheit of three days are 60° , 66° , and 69° . What is the average temperature of the three days?
28. Annie Anteater eats 1,705 ants a day. Alex Anteater eats 1,252 ants and 565 termites a day. How many more ants does Annie eat than Alex each day?
29. At the school carnival, Riva sees a 6-liter jar filled with marbles. Riva finds that 70 marbles can be placed in a 1-liter cup. What would be a good estimate of the total number of marbles in the jar according to Riva?
30. Two numbers have a product of 91. The smaller is 7. What is the difference of the two numbers?
31. What number is 100,000 more than 645,990,831 ?

Question set [32 - 33]

A rectangle has a length of 25 in and a width of 10 in.

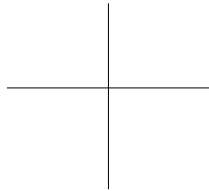
32. What is the perimeter of the rectangle?

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33. What is the area of the rectangle?

36. What is the smallest prime?

34. How many right angles do these perpendicular lines form?



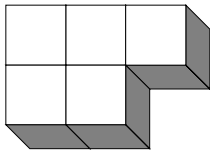
37. 0 is an even whole number. (True or False)

38. 2,500 people pass through the gates of Rocky Hill Amusement Park every hour. How many people pass through in 6 hours?

35. Five tightly packed cubic blocks (as the figure shows) are dipped in paint. How many of its faces

(a) would not be painted?

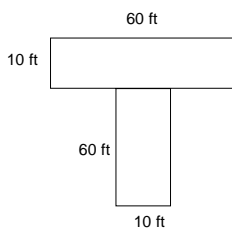
(b) would be painted?



39. A stationary store sells a certain type of envelope in packets of 25. The envelopes are shipped to the store in cartons that contain 20 packets. How many packets are there in a shipment of 4 cartons?

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40. A T-shaped parking lot is to be tiled by 1 ft by 1 ft stone tiles. How many pieces will be needed?



41. An average of 12,500 people visit the Great Western Caves every week. How many people visit it in 4 weeks?

42. An average of 350 people visit the Great Western Caves every week. How many people visit it in 4 weeks?

43. Apples cost \$2 a pound. A bushel weighs 20 pounds. How much do the apples cost?

44. Ben had two weeks to complete an important assignment. After 3 days, he hadn't started yet. After another week, he still hadn't started. How long did Ben have left to finish his assignment?

45. A roll of film costs either \$3.60 for 24 exposures or \$4.20 for 36 exposures, depending on the type. How much would 2 rolls of 24-exposure film and 3 rolls of 36-exposure film cost?

46. Darby and Paddy are two leprechauns*. Together they have hidden 145 gold coins. Darby has 5 more coins than Paddy. How many coins do they each have?

47. Dave will turn 21 in seven years, what was his age 3 year ago?

* leprechaun: (Irish Legend.) an elf resembling a little old man, believed to possess hidden gold and who can be made to reveal it if he is caught.

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48. Divide a number by $\frac{1}{2}$ and you get 10.
What is the number?
49. Ed, Dawn, Colleen, and Ben are at the library. Ben checks out twice as many books as Dawn. Colleen checks out 4 more books than Ed and 2 fewer than Dawn. Ben checks out 14 books. How many books does Ed check out?
50. Edith bought 5 cans of pears at \$.69 a can, 3 pounds of onions at \$.29 a pound, and a pound of ham at \$1.88 a pound. How much change will she get from \$10?
51. Eric, Frank, and Gerald go fishing off the pier. Together they catch 37 small fish. Frank caught 2 more fish than Eric; Gerald caught 3 more fish than Frank. How many fish does each catch?
52. Esther gave 13 of her stickers to Nicole. She gave $\frac{1}{2}$ of the remaining stickers to Rita. She then had 14 stickers. How many did she begin with?
53. How many odd numbers are between 20 and 30?
- Question set [54 - 58]*
Essential numerical facts.
54. $\frac{1}{2} + \frac{1}{3} + \frac{1}{6} =$
55. $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} =$

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56. $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10$
=

60. If $\sqrt{16} = 4$ and $\sqrt{25} = 5$, then what are the values of $\sqrt{81} - \sqrt{64} + \sqrt{49}$?

57. $1 \times 2 \times 3 \times 4 \times 5 =$

Question set [61 - 62]

Alex has \$84 and Brian has \$20.

61. How much should Alex share with Brian so that they will have same amount?

58. If we know the facts:

$1 + 3 = 4 = 2^2$

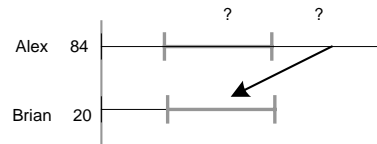
$1 + 3 + 5 = 9 = 3^2$

$1 + 3 + 5 + 7 = 16 = 4^2$

$1 + 3 + 5 + 7 + 9 = 25 = 5^2$

$1 + 3 + 5 + 7 + 9 + 11 + 13 = ?$

62. Try to use diagram to solve the problem.
What does “?” stand for?



59. What is the smallest odd integer greater than 299? What is the greatest even integer smaller than 299?

63. In 1892, President Harrison proclaimed the 400th anniversary of the discovery of America. How many centuries was this? How many decades?

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64. In 1937, President Roosevelt proclaimed October 12 as Columbus Day. How many years it was after Columbus discovery (1492)?

Question set [68 - 72]

Number riddles.

68. A number when divided by 7 becomes 12. What is the number?

65. In an experiment, Tom set up two scales. On one he had 3 blue cubes and 2 red ones, and the scale showed a weight of 22 grams. On the second scale he had 2 blue cubes and 3 red ones, and the weight showing on the scale was 23 grams. What the weight if he set up 1 red cube and 1 blue one?

69. A number times 4 equals 28. What is the number?

70. A number divided by 4 equals 28. What is the number?

66. In December, a local hamburger chain sold 4,354 hamburgers. This was 1,567 fewer than in November. What was the total number of hamburgers sold for the two months?

71. A number when added to 12 becomes 17. What is the number?

67. It is 7 degrees below zero in Alaska and 28 degrees above zero here. How much warmer is it here? Write an equation.

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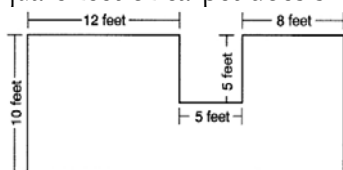
72. When two times a number added to 3, it becomes 15. What is the number?

76. A sweatshirt tagged \$24 is sold at \$18 now. What is the percent of discount?

73. Ms. Peterson charges \$12.75 to take three children's picture. How much did she charge to take pictures of the Sanchez's 5 children?

77. A loan of \$900 takes Jack 20 months to clear. How much should he increase his monthly payment to reduce the length of time by 25%?

74. Mary plans to put carpeting in her house. The floor plan shows the part of her house that will be carpeted. How many square feet of carpet does she need?



78. A train traveled 240 miles at 60 miles per hour. However, it arrived at its destination 1 hour late. How much faster should it travel to arrive on time?

75. $(1\frac{1}{5})^2 \times (2\frac{1}{2})^2 =$

79. The chart below describes the speed of four desktop printers. Which printer is the fastest?

Printer	Description
Roboprint	Prints 2 pages per second
Voltronn	Prints 1 page every 2 seconds
Vantek Plus	Prints 160 pages in 2 minutes
DLS Pro	Prints 100 pages per minute

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80. Dividing a number by $\frac{2}{3}$ is equivalent to
- (A) dividing it by 2, then multiplying by 3
 - (B) dividing it by 2, then multiplying by 2
 - (C) dividing it by 3, then multiplying by 3
 - (D) dividing it by 3, then multiplying by 2