Young Mathematics, Benchmark Assessment Review Math 7/7+ 0115

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TEST INSTRUCTIONS

Show all work and box all answers.

WAKE COUNTY SCHOOLS   **2014 - 2015**

1. Which expression is equivalent to $3a + 33$?

A. $3(a + 33)$

B. $7a + 27 - 4a + 6$

C. $3(3a + 11)$

D. $5a + 29 - 2a + 3$

2. Nichole was simplifying the expression shown for homework but made a mistake.

Given: $4(2x + 5y) - \frac{1}{3}(9x + 30)$

Line 1: $8x + 20y - 3x - 10$

Line 2: $5x + 10y$

Line 3: $5(x + 2y)$

Which statement describes how Nichole should fix her first mistake?

A. On line 1, $20y$ should be $5y$.

B. On line 1, -10 should be $+10$.

C. On line 2, $+10y$ should be $+20y - 10$.

D. On line 3, $5(x + 2y)$ should be $5(x + 5y)$.

3. Tiffany bought a shirt worth c dollars and got a discount of 8% on the original price. What expression shows the total amount she paid?

A. $c - 0.08$

B. $0.92c$

C. $0.08c$

D. $c - 8c$

4. Doris wants to hang a mirror that is $14\frac{3}{4}$ inches wide in the center of a wall that is 25 inches wide. How much wall space should be left on each side of the mirror?

A. $5\frac{1}{8}$ inches

B. $5\frac{5}{8}$ inches

C. $10\frac{1}{4}$ inches

D. $11\frac{1}{4}$ inches

5. Use the information to answer the question.

Mr. Johnson is going to buy an $18\frac{3}{4}$ pound turkey for Thanksgiving. The turkey costs $2.80 per pound at the grocery store.

Which is the *closest* estimate to total cost of Mr. Johnson's turkey (before taxes)?

A. $36

B. $38

C. $57

D. $60

6. On a recent business, trip Mrs. Smith rented a car for a fee of $65 plus $0.15 per mile she drives. What is the *most* miles Mrs. Smith can drive without spending more than $200?

A. 135 miles

B. 265 miles

C. 900 miles

D. 1767 miles

7. The sum of 3 consecutive odd numbers is 63.

What is the *largest* of these numbers?

A. 19

B. 21

C. 23

D. 25

8. Alia made a scale drawing of a square park, which has a side length of 30 feet. She used the scale 3 centimeter= 5 feet.

What will be the area of the scale drawing?

A. 18 cm^2

B. 25 cm^2

C. 324 cm^2

D. 900 cm^2

**9.** A photograph measures 4 inches by 6 inches. Haley enlarges the photograph to be 32 inches by 48 inches.

What is the scale of the enlarged photograph to the original photograph?

A. 28 : 1

B. 8 : 1

C. 1 : 8

D. 1 : 28

10. The distance of 15 miles on a map is represented by 2 inches.

If the distance between two cities on the map is 8 inches, what is the actual distance between them?

A. 60 miles

B. 75 miles

C. 90 miles

D. 120 miles

11. ΔEFG is dilated to create $\Delta E'F'G'$.
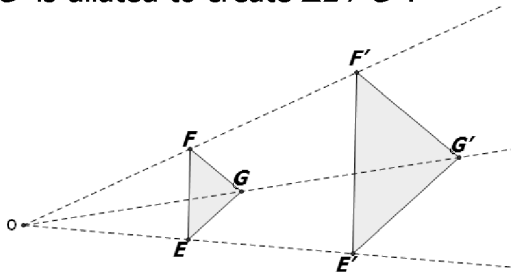
If $EF = 4$ and $E'F' = 8$, which statement is true?

A. If $FG = 3$, then $F'G' = 7$.

B. If $FG = 3$, then $F'G' = 6$.

C. If $GE = 2$, then $G'E' = 1$.

D. If $GE = 2$, then $G'E' = 6$.

12. Will is making a scale drawing of an airplane. The airplane has a 100-foot wingspan and is 50 feet long. His drawing of the airplane has a 10-inch wingspan. What is the length of the airplane in Will's drawing?

A. 5 inches

B. 9.5 inches

C. 10.5 inches

D. 20 inches

13. A man works 5 consecutive days for 8 hours, $7\frac{1}{2}$ hours, $8\frac{1}{4}$ hours, $6\frac{1}{2}$ hours, and $6\frac{3}{4}$ hours. How much money will he earn for the 5 days if he makes $15.50 per hour?

A. $29

B. $37

C. $449.50

D. $573.50

14. Jake eats $\frac{1}{4}$ of a box of cereal in $\frac{1}{8}$ of a month. If he continues to eat cereal at this rate and all the cereal boxes are the same size, how many boxes of cereal will Jake eat in a month?

A. $\frac{1}{32}$ box

B. $\frac{3}{8}$ box

C. 2 boxes

D. 4 boxes

15. In a research lab, a scientist is studying the weights ants can carry on their backs. The data table shows the weights of 5 ants and the weights each carries on its back.

Ant Name	Weight of Ant (mg)	Weight Carried (mg)
Chip	3	54
Cutter	2	36
Flik	4	72
Rosie	5	90
Queen Anne	7	126

Which statement describes the unit rate in this situation?

A. For every milligram an ant weighs, it can carry 51 milligrams on its back.

B. For every milligram an ant weighs, it can carry 34 milligrams on its back.

C. For every milligram an ant weighs, it can carry 24 milligrams on its back.

D. For every milligram an ant weighs, it can carry 18 milligrams on its back.

16. Look at the diagram.
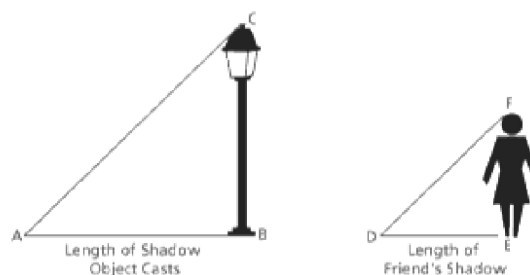
Chelsea's friend, who is 5 feet 3 inches tall, casts a 6-foot shadow. At the same time of day, a nearby lamp post casts an 18-foot shadow. What is the height of the lamp post?

A. $15\dfrac{3}{4}$ feet

B. $16\dfrac{3}{4}$ feet

C. 18 feet

D. 30 feet

17. Adam's family went out to lunch yesterday and their meal cost $32.85 total.

If they plan to leave a 20% gratuity, how much tip should they leave?

A. $3.29

B. $6.57

C. $26.28

D. $39.42

18. A women's clothing store wants to know which color shirts they should order for their spring sale. Which group should they survey to achieve the *most valid* results?
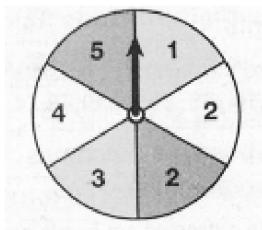
   A. every fifth person who enters the grocery store beside the clothing store

   B. every girl at the local middle school

   C. a group of mothers aged 30-40

   D. the first fifty people who enter a bank for one week

19. What is the probability of spinning a number *less* than 3?

   A. $\dfrac{1}{6}$

   B. $\dfrac{2}{6}$

   C. $\dfrac{3}{6}$

   D. $\dfrac{4}{6}$

20. Nancy is going to pick a marble out of a bag without looking. There are three colors of marbles in the bag – blue, red, and purple. The probability of choosing a blue marble is $\frac{1}{4}$, and the probability of picking a red marble is $\frac{2}{3}$. What is the probability of Nancy picking a purple marble?

   A. $\dfrac{1}{12}$

   B. $\dfrac{1}{6}$

   C. $\dfrac{1}{3}$

   D. $\dfrac{2}{3}$

21. A company produces computer batteries. Everyday, the company produces exactly 500 batteries. To keep track of how many batteries are defective, a worker tested a box of batteries. The results are in the table below.

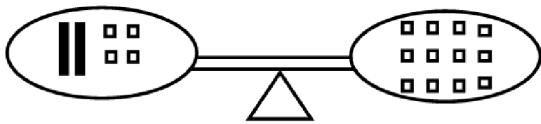| Working Batteries	Defective Batteries	Total
17	3	20

Using these results, about how many batteries each day would be defective?

   A. 3

   B. 25

   C. 75

   D. 425

22. An inequality is written in the box.

$$\frac{x-4}{-3} < -8$$

What is the solution to the inequality?

A. $x < 28$

B. $x < 20$

C. $x > 20$

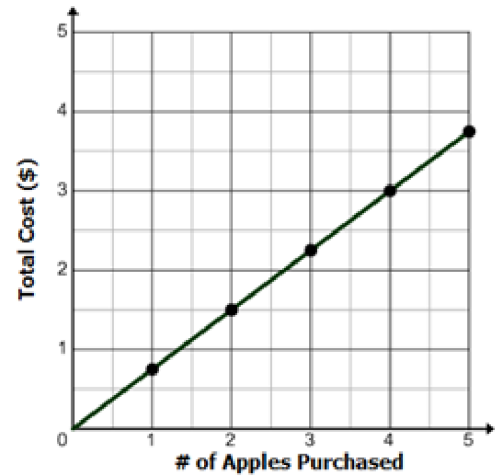D. $x > 28$

23. This picture shows a scale that is balanced.

If $\blacksquare$ = x and $\square$ = +1, which equation is represented by the picture?

A. $4x + 2 = 12$
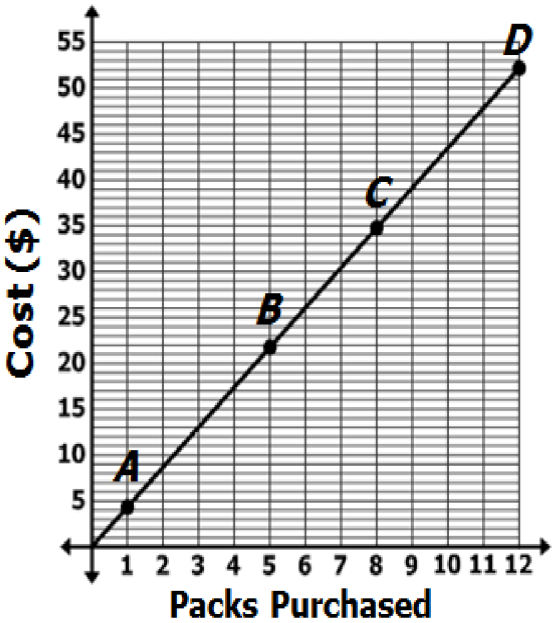
B. $2x + 4 = 12$

C. $2 + 4 = 12x$

D. $2x - 4 = 12$

24. The total cost of purchasing apples at the grocery store is graphed.

What is the constant of proportionality?

A. $0.50

B. $0.75

C. $1.25

D. $1.50

25. Use the graph to answer the question.

Packs Purchased

Darius must purchase packs of paper clips for his office. He sees them advertised in the newspaper 12 packs for $52.20. He plots this relationship on the graph shown.

What does Point C located at (8, 34.8) represent in the context of Darius's situation?

A. The cost of 8 packs of paper clips is $34.80.

B. The cost of 34.8 packs of paper clips is $8.

C. The cost of 8 packs of paper clips is $42.80.

D. The cost of 42.8 paper clips is $8.

26. Brenda is training for a marathon and is keeping track of her miles ran and her total time. Her data is shown in the table.

Number of Miles (m)	Time in Minutes (t)
1	9
2	18
3	27
4	36
5	x

If the table shows a proportional relationship between the number of miles ran and time to complete, which equation can be used to find how long it would take Brenda to run 5 miles?

A. $t = 9 + 5$

B. $t = 9(5)$

C. $5 = 9(t)$

D. $m = 9(5)$

27. A graph is given.
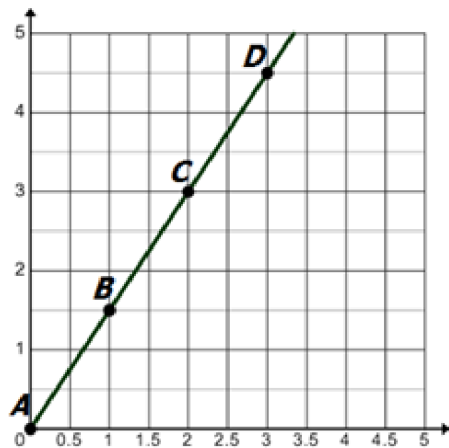
Which point represents the unit rate?

A.   point A

B.   point B

C.   point C

D.   point D

28. The graph below represents the cost of soda packs as a unit rate of $5 for every pack of soda.
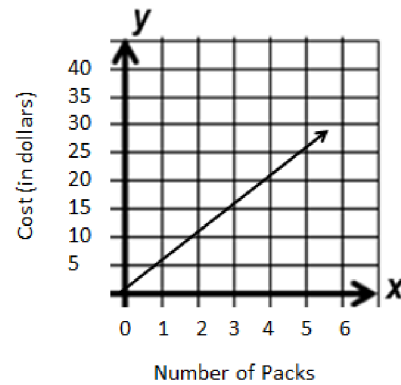
If p represents the packs of soda and d represents the cost in dollars, which equation can be used to find the cost of any given number of soda packs?

A. $d = 5 + p$

B. $d = 5p$

C. $p = 5d$

D. $d = 5 \div s$

29. Alice wants to wear a shirt and jeans to the dance. She has a red, a blue, a green, and a yellow shirt. She also has a pair of black jeans and a pair of blue jeans.

How many possible combinations of outfits can Alice create?

A. 8 outfits

B. 10 outfits

C. 12 outfits

D. 14 outfits

30. If Jordan can only wear one pair of socks and shoes at a time, how many different combinations can he create?

Socks	Shoes
White	Blue Sneakers
Blue	Black Sneakers
Red	White Sneakers

A. 3

B. 6

C. 9

D. 12

#	Answer	Objective	#	Answer	Objective
1.	B	Obj : 7.EE.1. Apply properties of operations as strat...	15.	D	Obj : 7.RP.1. Compute unit rates associated with rati...
2.	C	Obj : 7.EE.1. Apply properties of operations as strat...	16.	A	Obj : 7.RP.3. Use proportional relationships to solve...
3.	B	Obj : 7.EE.2. Understand that rewriting an expression...	17.	B	Obj : 7.RP.3. Use proportional relationships to solve...
4.	A	Obj : 7.EE.3. Solve multi-step real-life and mathemat...	18.	C	Obj : 7.SP.1. Understand that statistics can be used ...
5.	C	Obj : 7.EE.3. Solve multi-step real-life and mathemat...	19.	C	Obj : 7.SP.2. Use data from a random sample to draw i...
6.	C	Obj : 7.EE.3. Solve multi-step real-life and mathemat...	20.	A	Obj : 7.SP.5. Understand that the probability of a ch...
7.	C	Obj : 7.EE.3. Solve multi-step real-life and mathemat...	21.	C	Obj : 7.SP.6. Approximate the probability of a chance...
		Obj : 7.EE.4. Use variables to represent quantities i...	22.	D	Obj : 7.EE.4. Use variables to represent quantities i...
8.	C	Obj : 7.G.1. Solve problems involving scale drawings...	23.	B	Obj : 7.EE.4. Use variables to represent quantities i...
9.	B	Obj : 7.G.1. Solve problems involving scale drawings...	24.	B	Obj : 7.RP.2. Recognize and represent proportional re...
10.	A	Obj : 7.G.1. Solve problems involving scale drawings...	25.	A	Obj : 7.RP.2. Recognize and represent proportional re...
11.	B	Obj : 7.G.1. Solve problems involving scale drawings...	26.	B	Obj : 7.RP.2. Recognize and represent proportional re...
12.	A	Obj : 7.G.1. Solve problems involving scale drawings...	27.	B	Obj : 7.RP.2. Recognize and represent proportional re...
13.	D	Obj : 7.NS.3. Solve real-world and mathematical probl...	28.	B	Obj : 7.RP.2. Recognize and represent proportional re...
14.	C	Obj : 7.RP.1. Compute unit rates associated with rati...	29.	A	Obj : 7.SP.8. Find probabilities of compound events u...
			30.	C	Obj : 7.SP.8. Find probabilities of compound events u...

Objectives Measured:	Items	Questions measuring this objective
Obj : 7.EE.1. Apply properties of operations as strat...	2	1, 2
Obj : 7.EE.2. Understand that rewriting an expression...	1	3
Obj : 7.EE.3. Solve multi-step real-life and mathemat...	4	4, 5, 6, 7
Obj : 7.G.1. Solve problems involving scale drawings...	5	8, 9, 10, 11, 12
Obj : 7.NS.3. Solve real-world and mathematical probl...	1	13
Obj : 7.RP.1. Compute unit rates associated with rati...	2	14, 15
Obj : 7.RP.3. Use proportional relationships to solve...	2	16, 17
Obj : 7.SP.1. Understand that statistics can be used ...	1	18
Obj : 7.SP.2. Use data from a random sample to draw i...	1	19
Obj : 7.SP.5. Understand that the probability of a ch...	1	20
Obj : 7.SP.6. Approximate the probability of a chance...	1	21
Obj : 7.EE.4. Use variables to represent quantities i...	3	7, 22, 23
Obj : 7.RP.2. Recognize and represent proportional re...	5	24, 25, 26, 27, 28
Obj : 7.SP.8. Find probabilities of compound events u...	2	29, 30

#	Key	Item ID		#	Key	Item ID
1.	B	MC 124992		16.	A	MC 44319
2.	C	MC 167682		17.	B	MC 125048
3.	B	MC 146945		18.	C	MC 154340
4.	A	MC 167767		19.	C	MC 50427
5.	C	MC 167692		20.	A	MC 154373
6.	C	MC 47434		21.	C	MC 154392
7.	C	MC 142266		22.	D	MC 142267
8.	C	MC 141606		23.	B	MC 117928
9.	B	MC 142063		24.	B	MC 142262
10.	A	MC 137573		25.	A	MC 167640
11.	B	MC 122981		26.	B	MC 126402
12.	A	MC 122461		27.	B	MC 142264
13.	D	MC 141618		28.	B	MC 126401
14.	C	MC 167627		29.	A	MC 50223
15.	D	MC 167629		30.	C	MC 34687