5/15/17 CCM6+7+

FINAL REVIEW of Unit 14 and complete required gridded response activity.

1. Agenda...Study for TEST TOMORROW! Last EOG chunk due Mon 5/22.
2. Get out your study guide and calculator.
3. No more warm-ups.

Ratio and Proportions (RP)

16. D
17. B
18. A
19. B

34. B
35. A
36. C

GRADE 6 MATHEMATICS—RELEASED FORM

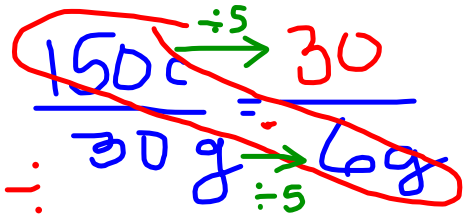
16 One serving of Mike's crackers has 150 calories and a mass of 30 grams. How many calories are in 6 grams of the crackers?

A 5

B 10

C 25

D 30



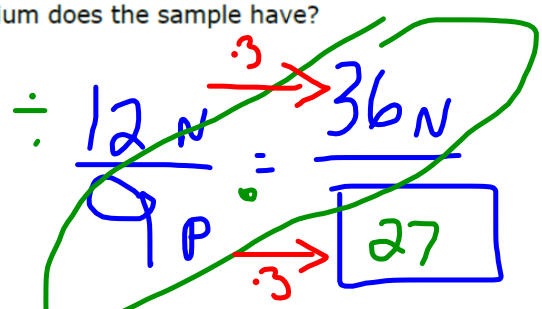
17 The ratio of nitrogen to potassium in a sample of soil is 12:9. The sample has 36 units of nitrogen. How much potassium does the sample have?

A 21 units

B 27 units

C 33 units

D 48 units



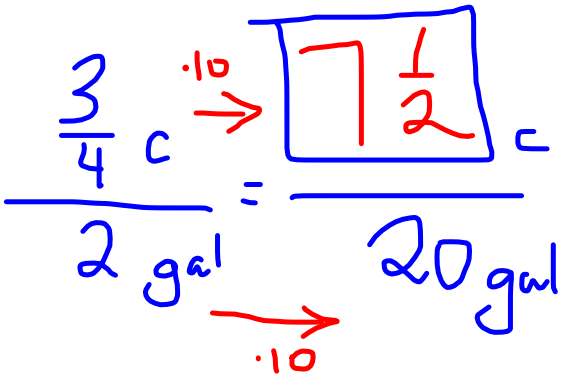
18 To clean a tank, $\frac{3}{4}$ cup of disinfectant is needed for every 2 gallons of water. How many cups of disinfectant are needed for 20 gallons of water?

A $7\frac{1}{2}$

B 15

C $22\frac{1}{2}$

D 30



GRADE 6 MATHEMATICS—RELEASED FORM

19 A laundry detergent is sold at four stores.

Store	Size (ounces)	Price
Hawkin's Store	60	$6.50
Don's Store	54	$5.50
Allen's Market	48	$5.61
Value Market	40	$4.50

Which store has the lowest price per ounce?

A Hawkin's Store

B Don's Store

C Allen's Market

D Value Market

34 A company that makes boxes finds that 3 out of 20 boxes are damaged. What percent of the boxes are damaged?

A 12%

B 15%

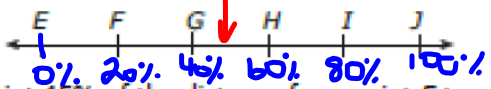
C 25%

D 34%

$\frac{3}{20} \xrightarrow{\cdot 5} \frac{15}{100}$

GRADE 6 MATHEMATICS—RELEASED FORM

35 Jack drew a number line on his paper.



Jack drew a new point 45% of the distance from point *E* to point *J*. Between which two letters does the new point lie?

A *G* and *H*

B *I* and *J*

C *F* and *G*

D *H* and *I*

36 Valerie is 64 inches tall. ***About*** how many centimeters tall is Valerie? (1 inch ≈ 2.5 centimeters)

A 25.6

B 30.6

C 160

D 180

$\frac{1 \text{ in}}{2.5 \text{ cm}} = \frac{64 \text{ in}}{160 \text{ cm}}$

√ HW

Unit 13 Study Guide

EXPONENTS REVIEW

1. Any number to the power of zero always equals 1 because # ÷ by itself.

2. If a number has a negative exponent, just flip it (reciprocal).

3. If two numbers with the same base are multiplying, just + the exponents.

4. If two numbers with the same base are dividing, just − the exponents.

5. If an exponent is beside a set of parentheses, just • it with the exponents inside the parentheses.

6. If a negative sign is in front of parentheses that have an exponent outside, where does it fall in the order of operations?

$-(5)^2$ last (do parentheses 1st)

7. If a negative sign is inside parentheses that have an exponent outside, where does it fall in the order of operations?

$(-5)^2$ first $(-3 \cdot -3)$ etc.

Multiple Choice

Identify the choice that best completes the statement or answers the question.

D 8. $(-8.6)^0$

a. −1 b. 0 c. −8.6 d. 1

D 9. $-(6)^{-1}$ $\frac{1}{-6}$

a. 6 b. $-\frac{1}{-1^6}$ c. $\frac{1}{6}$ d. $-\frac{1}{6}$

C 10. $(4)^{-2}$

a. $-\frac{1}{16}$ b. 16 c. $\frac{1}{16}$ d. −8

D 11. $\frac{12}{c^{-8}d^2}$

a. $\frac{12}{cd^{-6}}$ b. $\frac{96c}{d^2}$ c. $\frac{12}{c^8d^2}$ d. $\frac{12c^8}{d^2}$

√ HW

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A 12. $7x^{-8} \cdot 6x^3$

a. $\frac{42}{x^5}$ b. $\frac{1}{42x^5}$ c. $42x^{11}$ d. $13x^{-5}$

A 13. $(5k^2)^3$ $125k^6$

a. $125k^6$ b. $125k^5$ c. $5k^6$ d. $5k^8$

A 14. $\frac{x^{14}}{x^7}$

a. x^7 b. x^{98} c. $\frac{1}{x^7}$ d. x^{21}

A 15. $\left(\frac{3x}{2}\right)^4$

a. $\frac{81x^4}{16}$ b. $6x^4$ c. $\frac{12x^4}{8}$ d. $\frac{81x^4}{2}$

B 16. $\left(b^4\right)^6 \cdot \left(b^2\right)^4$ $b^{24} \cdot b^8 = b^{32}$

a. b^{192} b. b^{32} c. $2b^{32}$ d. b^{15}

A 17. $\frac{8b^3}{20b^3}$

a. $\frac{2}{5}$ b. $\frac{2}{5}b$ c. $4\frac{1}{2}$ d. $\frac{8}{28}b^6$

SIMPLIFY. ***Pay attention to what you wrote above in the exponents review!***

18. $7^2 \bullet 7^5$

7^7

823,543

19. $a^2b \bullet a^3b^4$

a^5b^5

20. $\frac{m^4n^{-3}}{m^{-2}n}$

$m^6n^{-4} = \frac{m^6}{n^4}$

21. $-(r^5s^4)^0$

-1

22. $\frac{x^5y^2}{x^{-1}y^2}$

$x^6y^0 = x^6$

exponent

23. $-2\left(\frac{2x^{-3}y^{-1}}{4x^2y^{-3}}\right)^3$

$-2\left(\frac{1}{2}x^{-5}y^2\right)^3$

$-8 \cdot \frac{1}{8} \cdot x^{-15} \cdot y^6$

$\frac{-y^6}{4x^{15}}$

√HW

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SCIENTIFIC and STANDARD NOTATION—write the number in its equivalent *other* form.

24. 8,030,000,000 = 8.03×10^9

25. 8.6×10^{-7} = 0.0000008 6

6 zeros

26. 8.72×10^5 = 872,000

27. 0.0000073 = 7.3×10^{-6}

Put in order from least to greatest.

28. 72×10^5, 6.9×10^6, 23×10^5 (3, 2, 1)

72x10^5 = 7,200,000

6.9x10^6 = 6,900,000

23x10^5 = 2,300,000

29. 19×10^{-3}, 2.5×10^{-4}, 1.89×10^{-4} (3, 2, 1)

.019 .00025 .000189

Solve. Express your result in scientific notation.

30. $9.7821 \times 10^{-17} + 3.14 \times 10^{-18}$

$.314 \times 10^{-17}$

$(9.7821 + .314) \times 10^{-17}$

10.0961×10^{-17}

1.00961×10^{-16}

31. $1.824 \times 10^4 - 3.821 \times 10^2$

$.03821 \times 10^4$

$(1.824 - .03821) \times 10^4$

1.78579×10^4

32. $(1.5 \times 10^5)(4 \times 10^9)$

$(1.5 \times 4)(10^{5+9})$

6×10^{14}

32. $(5.1 \times 10^3)(1.63 \times 10^{-5})$

$(5.1 \times 1.63)(10^{3+-5})$

8.313×10^{-2}

A 33. Which number is written in scientific notation?

a. 7.8×10^{-5} b. 3.4×100^2 c. 0.84×10^6 d. -5×10^{-12}

D 34. Which number is NOT written in scientific notation?

a. 3×10^{-8} b. 6.7×10^3 c. 8.7×10^{-5} d. 25.67×10^{-2}

D 35. 0.0805

a. 80.5×100^{-3} b. 8.05×10 c. 0.805×10^{-1} d. 8.05×10^{-2}

√HW

C 36. 9×10^4

a. 9,000 b. 90^4 c. 90,000 d. 360

B 37. Order 3.21×10^6, 42×10^4, and 0.11×10^{10} from least to greatest.

3210000 420000 1100000000

a. 3.21×10^6, 42×10^4, 0.11×10^{10} c. 42×10^4, 0.11×10^{10}, 3.21×10^6

b. 42×10^4, 3.21×10^6, 0.11×10^{10} d. 0.11×10^{10}, 3.21×10^6, 42×10^4

B 38. Which list shows the numbers in order from least to greatest?

54000 5400 45000

a. 5.4×10^4, 5.4×10^3, 4.5×10^4 c. 5.4×10^3, 5.4×10^4, 4.5×10^4

b. 5.4×10^3, 4.5×10^4, 5.4×10^4 d. 4.5×10^4, 5.4×10^3, 5.4×10^4

B 39. $(9 \times 10^7)(7 \times 10^9)$ 63×10^{16}

a. 6.3×10^{64} b. 6.3×10^{17} c. 1.6×10^{64} d. 1.6×10^{17}

A 40. $(0.4 \times 10^{-6})(0.7 \times 10^{-2})$ $.28 \times 10^{-8}$

a. 2.8×10^{-9} b. 2.8×10^{-8} c. 2.8×10^{-7} d. 0.28×10^{-9}

D 41. The diameter of Mercury is about 3.0×10^3 miles. The diameter of Jupiter, the largest planet, is about 8.8×10^4 miles. What is the difference between the diameters of these planets expressed in scientific notation?

3×10^4 $(8.8 - .3) \times 10^4$

a. 5.8×10^7 miles c. 8.5×10^2 miles

b. 5.8×10^1 miles d. 8.5×10^4 miles

A 42. The masses of four objects were measured during a physics experiment. The first and the last objects each had a mass of 41.918 g. The second and the third objects each had a mass of 24.83 g. Find the total mass of the four objects. Write your answer in scientific notation.

133.496

2 moves

a. 1.33496×10^2 g c. 1.33596×10^3 g

b. 1.33496×10^4 g d. 1.33496×10 g

Gridded Response Required Practice.

Calculator keys and troubleshooting for EOG.