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math instruction

ALGEBRA I

NYS REGENTS REVIEW

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Skill: Order of Operations

Use the order of operations to simplify the following expression.

$$32 - [(5 - 8)^2 + 2(3)]$$

Skill: Evaluating Expressions

Evaluate the expression for the given values.

$\frac{a^2-4b}{2}$ if $a = 4$ and $b = -$

Regents Pr[illegible] Qu[illegible]

[illegible]ple Choi[illegible]

[illegible]ssion $3 - \frac{10}{2}$ is e[illegible]ould be done first?

(1) Ad[illegible]bing

(4) [illegible]ing

Constru[illegible]onse (2 pts)

Michael wa[illegible]e problem, evaluate $3x^2 - 1$ when $x = -2$. Michael thinks the answer is -13. Is Michael correc[illegible]n.

Skill: Identifying Properties

Fill in the blank with either the commutative, associative, or distributive property.

a. $-2 + (x + y) = -2 + (y + x)$ _____ property of_____

b. $2 \cdot (x \cdot y) = (2 \cdot x) \cdot y$ _____ property of_____

c. $\frac{15x+30}{3} = 5x + 10$ _____ property of_____

Skill: Distributive Property

Simplify the expression using the distributive property. Combine like terms if needed.

$-2(x + 4)$ $6(f -$

Regents Practice Qu

Multiple Choice (2pts)

When Ryan is solving the equation x^2 $x - 1) = 4x$, he writes $x^2 + 12x - 6 = 4x$. Which property justifies Ryan's first

(1) Associative (3) Comm

(2) ive (4) Addition

Constructed Response (2 pts)

Lily is solving the equation $4(2x - 1) - 1 = 11$ for x. Her work is shown to the right.

Line 1	$4(2x - 1) - 1 = 11$
Line 2	$4(2x - 1) = 12$
Line 3	$8x - 1 = 12$
Line 4	$8x = 13$
Line 5	$x = \frac{13}{8}$

Between which two lines did Lily make a mistake? Explain which property was used *incorrectly.*

Skill: Translating Words to Algebra

Translate each of the statements below into algebraic equations.

a. Nine less than "x" is equal to 10_____

b. The quotient of 36 and "a" is 4 _____

c. Twice the sum of f and 6 is 18_____

Skill: Translating Algebra to Words

Directions: Translate each of the equations below into algebra

a. $3(k+3)=9$ b. $4k -$ 1

Regents Practice Questions

Multiple Choice (2pts)

Jenna deposits $500 into h t and w every week, w. Which of the following expressions represents the bank ac w weeks?

(1) $500 \cdot 50w$ (3) $- 500$

(2) $500 - 50$ $\frac{5}{50w}$

Constructed Response (4pts)

Rachel w he deli nch for her and her friends. She bought slices of pizza, soda, and bags hips bought th as many bags of chips as sodas, and two fewer pizza slices than

If x ts the number of sodas they bought, write an algebraic expression that represents the num h items they bought in total.

Skill: Rational & Irrational Numbers

Identify whether each of the following numbers is rational or irrational.

a. $.\overline{86}$ b. 2.7 c. 2π d. $\sqrt{169}$

e. 8.54172948 … f. $\frac{\pi}{3}$ g. $\sqrt{2}$ h. $\frac{3}{4}$

Regents Practice Questions

Multiple Choice (2pts)

1. Which expression results in an irrational number?

(1) $\sqrt{100} - \sqrt{25}$ (3) $\sqrt{1}$

(2) $\sqrt{36} \cdot \sqrt{1}$ $\sqrt{2} + \sqrt{8}$

2. Gi $M = \sqrt{10}$ $3\sqrt{14}$ $H = \sqrt{121}$

W xpression ts in a rational number?

(3) $T + H$

(2) H (4) $H + M$

d Resp pts)

A tea te the set of numbers on the board:

$a = \sqrt{15}$ $b = 3.1$ $c = \sqrt{81}$

E $a + b$ is irrational, but $b + c$ is rational.

Skill: Solving Linear Equations

What is the solution to the equation $\frac{2}{3}\left(x+\frac{6}{5}\right)=5$?

Skill: Solving Linear Equations with Variables on Both Sides

Solve algebraically for x:

$$-\frac{3}{5}(x \quad \frac{3}{5}x=-\frac{1}{2}$$

Regents Practice Q

Multiple Choice (2pts)

1. Which valu nak n $\frac{x-2}{3}+\frac{1}{}$ e:

) $-\frac{5}{2}$

   (2) (

2. The value of x that satisfies the equation $\frac{2}{3}=\frac{x+9}{15}$ is

   (1) 1 (3) 19

   (2) -1 (4) -19

Response (2 pts)

Sol ation below algebraically for the exact value of x.

$$6-\frac{3}{4}(x+7)=6x$$

Skill: Solving Literal Equations

The formula for the perimeter of a rectangle is $P = 2w + 2l$. Write a formula that can be used to find the length, l, in terms of P, and w.

Skill: Solving Literal Equations with Square Roots

The volume of a right circular cone can be calculated using the [illegible] $\frac{1}{3}\pi r^2 h$. [illegible]ula that can be used to find the positive value fo[illegible]radius, r, in [illegible]

Regents Practice Questions

Multiple Choice (2pts)

Three students were asked t[illegible]quation [illegible]or y. Their responses are shown below.

[illegible] $= \frac{x+}{}$

ii. [illegible] $+ z^2)$

[illegible]onse[illegible]rectly sol[illegible]

(1) [illegible] (3) i., ii., and iii.

(2) i. a[illegible] (4) ii. and iii.

C[illegible]Response (2 pts)

The f[illegible]r converting degrees Fahrenheit, F to degrees Kelvin, K is:

$$K = \frac{5}{9}(459.67 + F)$$

Solve for F in [illegible]K.