

Grade 9 Math Midterm/Exam Review ~ June

Polynomials

Simplify:

a) $2a + 3a - n - 2n =$

b) $4a - 5a + 3q - 2q =$

c) $4x - 3y + x - 2y =$

d) $3(x + y) =$

e) $q - (7 - 2q) =$

f) $5m - 2n - (-5m - 2n) =$

g) $(4a - 5b) - (-5b - 3a) - a + b =$

h) $4a - 2b - 3c - (5a - 2b - 3c) =$

i) $3(2x^2 + 5y + 4) =$

j) $\frac{(8a^2)(-4b^2)}{-16ab}$

k) $\frac{27x - 18y + 9z}{9}$

Factoring

Common Factoring:

l) $4xa - 8xb =$

m) $ax^3 - 5ax^2 + 3ax =$

Difference of Two Squares:

n) $x^2 - 49 =$

o) $100x^2 - 81 =$

Trinomial Factoring:

p) $x^2 + 13x + 40 =$

q) $x^2 - x - 72 =$

r) $9t^2 - 12t + 4 =$

Equations

s) $6 + 3k = 27$

t) $3h - 4 = h + 6$

u) $3 - (6n - 15) = 4n + 8$

v) $\frac{1}{5}x + 5 = 2$

Inequalities

w) $k + 7 \geq 5$

x) $-3v < 9$

Solve and graph:

y) $12 \geq -q + 10$

z) $18 - 5z < 3$

Word Problems

Addition	increased by more than combined, together total of sum added to
Subtraction	decreased by minus, less difference between/of less than, fewer than
Multiplication	of times, multiplied by product of increased/decreased by a factor of (this type can involve both addition or subtraction <i>and</i> multiplication!)
Division	per, a out of ratio of, quotient of percent (divide by 100)
Equals	is, are, was, were, will be gives, yields sold for

- AA) Coach Travis purchased 30 more golf balls than baseballs this season. If she purchased a total of 96 balls, how many baseballs and golf balls did he purchase?
- BB) Chaya is twice as old as Morgan. In five years the sum of their ages will be 34. How old is each girl?

Answers

a) $5a - 3n$ b) $-a + q$ c) $5x - 5y$ d) $3x + 3y$ e) $3q - 7$ f) $10m$

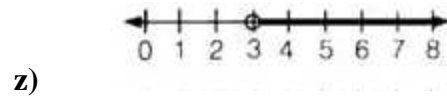
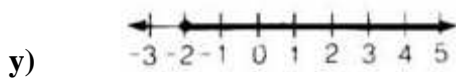
g) $6a + b$ h) $-a$ i) $6x^2 + 15y + 12$ j) 2 k) $3x - 2y + z$

l) $4x(a - 2b)$ m) $ax(x^2 - 5x + 3)$ n) $(x - 7)(x + 7)$ o) $(10x - 9)(10x + 9)$

p) $(x + 8)(x + 5)$ q) $(x + 8)(x - 9)$ r) $(3t - 2)(3t - 2)$

s) $k = 7$ t) $h = 5$ u) $n = 1$ v) $x = -15$

w) $k \geq -2$ x) $v < -3$



AA) The coach purchased 33 baseballs and 63 golf balls.

BB) Morgan is 8 years old and Chaya is 16.