Math 9 – FINAL REVIEW NOTES

CHAPTER 2 – Rational Numbers

1.rational numbers $4, \frac{18}{5}, 4.7, -3, -\frac{4}{5}, 6.\overline{5}$

irrational numbers do not repeat, do not end → $\pi, \sqrt{2}$

order — ascending ↑, descending ↓

2.add/subt/mult/div – order of operations – correct use of calculator

a) $-12+(-30)+8 = -34$

b) $\frac{-3(20)}{12} = -5$

c) $\frac{(-6-3+15-2)}{(4-14-1+9)} = -2$ → $\frac{4}{-2} = -2$

CHAPTER 3 – powers and Exponents

1.exponent laws

$2^3 \times 2^2 =$ + → 2^5

$3^6 \div 3^2 =$ − → 3^4

$(5^2)^3 =$ × → 5^6

→ $(ab)^3 = a^3b^3$

→ $(a \div b)^2 = a^2 \div b^2$

$4^0 = a^0 = 100^0 =$ 1

2. order of operations BEDMAS

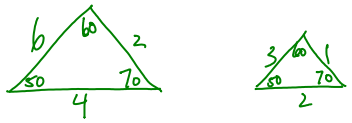
"proper" use of calculator

CHAPTER 4 – Scale Factors and Similarity

1. enlarge — scale factor: #>1
   reduce — scale factor: between 0 and 1

2. scale = diagram/picture / actual

3. similar figures
   angles — same measure for angles in same place
   sides — proportional



CHAPTER 5 – Intro to Polynomials

1. terms: $4,\ a,\ -7b^2$

polynomial – monomial (1 term) m; binomial (2 terms) m+7; trinomial (3 terms) m+7−2a

degree – of a term: $8m^3$ (degree); - of a polynomial: $8m^3 + 4x^2y^5$ (degree 7)

coefficient: $-7t$

like terms: same variable with same exponent

① $x, 4x$ ② $x^2, 4x^2$ ③ ~~t, m~~ ④ ~~t, t^2~~

2. add/subt polynomials

Ⓐ $3x - 2x^2 + x - 2x^2 \rightarrow 3x + x - 2x^2 - 2x^2 = 4x - 4x^2$

Ⓑ $(8c - 3) + (5c + 2) = 8c - 3 + 5c + 2 = 13c - 1$

Ⓒ $(8c - 3) - (5c + 2) = 8c - 3 - 5c - 2 = 3c - 5$ (change signs)

2

CHAPTER 6 – Linear Relations

1.patterns

XX X (1) XXX XX (2) XXXX XXX (3) ? (4)

table, equation

fig #	# of X
1	3
2	5
3	7

gap = 2

equation: gap (x) fig # (+) ___ = # X

gap		fig #		
2	x	1	+ 1	= 3
2	x	2	+ 1	= 5
2	x	3	+ 1	= 7
varies				varies

2 f + 1 = X

2.interpret/read graphs

CHAPTER 7 – Multiply and Divide Polynomials

mult/div monomials and polynomials

$(3xy)(2x^4)$

$(3)(2)(x x^4)(y)$

$= 6x^5y$

$(-8x^3y) \div (4x)$

$\frac{-8x^3y}{4x}$

$= -2x^2y$

distributive property

$4(5x - 3)$

$= 4(5x) - 4(3)$

$= 20x - 12$

$\frac{(6x^2 - 8x)}{2x}$

$\frac{6x^2}{2x} - \frac{8x}{2x}$

$= 3x - 4$

CHAPTER 8/9 – Solve Equations and Inequalities

solve equations and inequalities

- isolate variable — opposite operation —
- for ineq remember change inequality if mult/div BY a neg

$\frac{2x}{2} = \frac{4}{2}$

$x = 2$

$8 \div m = 7$

$m \times \frac{8}{m} = 7 \times m$

$8 = 7m$

$\frac{8}{7} = \frac{7m}{7}$

$\frac{8}{7} = m$

$4x - 2 = 12$

$+2 \quad +2$

$\frac{4x}{4} = \frac{14}{4}$

$x = \frac{7}{2}$

$\frac{3x}{3} < \frac{-6}{3}$

$x < -2$

$\frac{-3x}{-3} < \frac{6}{-3}$

$x > -2$

$4(x + 2) \geq 12$

dist. prop.

$4x + 8 \geq 12$

$4x \geq 4$

$x \geq 1$

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Chapter 11 – Data Analysis

Key terms / words

— factors influencing data collecting (7) = meaning

— population / sample (part of the population

— Sample TYPES — random sample (stratified, systematic, Voluntary, convenience) ← meaning.

- probability — $\frac{\text{favourable outcomes}}{\text{TOTAL outcomes}}$ (theoretical, experimental)

— mean — average — add all and ÷ by number of items

— median — middle, when numbers in order

— mode — most

Finance / Budget

debit — withdraw —

credit + deposit +