Study Guide for Finals & STAR

* Solve Percents
  - multiply Diagonals

Part is	Percent %
whole of	100

* Write fractions as decimals & vice versa

* Write percents as fractions & vice versa

* Write percents as decimals & vice versa

* Know the difference between rational & irrational numbers

* Know Mean, Median, Mode, and range

* Know how to add, subtract, multiply, and divide whole Numbers & decimals

* Know how to graph on a number line

Part 2

* Find opposite & absolute value

  Example 1 - |-3|, |3|

* Know the coordinate plane - quadrants, etc.

* Know how to make a factor tree, GCF LCM

* Know how to graph reflections across the y & x axis

* Adding, subtracting, multiplying, & dividing decimals

* Know what the base & exponent are

* Order of operations (PEMDAS)

* Write & evaluate algebraic expressions

  Example - $4n + 3$ if $n = 2$

  $4 \cdot 2 + 3$

  $8 + 3$

  $\boxed{11}$

* Factor & Distribute
  - $4(x+3)$ $\quad$ $4x + 12$
  - $9x + 27$ $\quad$ $9(3x + x)$

Part 3

* Know your properties

* m & d one-step equations

$\frac{2x}{2} = \frac{6}{2}$, $2 \cdot 3 = 6$, $6 = 6$ ✓ , $x = 3$

$\frac{n}{4} \cdot 4 = 6 \cdot 4$, $n = 24$, $\frac{24}{4} = 6$, $6 = 6$ ✓

* value for x (fraction)

$\frac{3x}{2} = \frac{x}{2}$, $\frac{6}{2} = \frac{2x}{2}$, $x = 3$

* Open circle (o) < or >, closed circle (o) ≤ or ≥

* Ratios, ratio tables

1	2	3	4	5	6
24	48	72	96	120	x

$\frac{1}{24} = \frac{6}{x}$, $\frac{1x}{1} = \frac{144}{1}$, $x = 144$

* Two-step equations

$3x + 1 = 10$, $-1 \quad -1$, $\frac{3x}{3} = \frac{9}{3}$, $x = 3$

$\frac{n}{2} - 4 = 6$, $+4 \quad +4$, $\frac{n}{2} = 10 \cdot 2$, $n = 20$

Part 4

*Properties of Quadrilaterals

quadrilaterals

- 4 sides
- 4 vertices (corners)
- interior angles add up to 360°

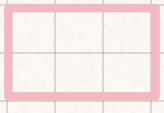
squares

- all sides are equal
- opposite sides are parallel
- all angles are right

Rhombus

- arcs are equal
- parallel sides are equal

rectangle

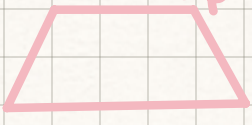


- opposite sides are =
- opposite sides are parallel

parallelogram

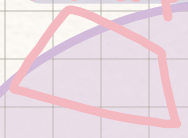
- congruent sides
- matching arcs

trapezoid



- one pair of congruent sides

trapezium



- NO equal sides

kite

- Adjacent points connect

Part 5

* Area of shapes

- Parallelogram - $b \times h$
- triangle - $\frac{1}{2} b h$
- Volume - lwh
- trapezoid - $\frac{b^1 + b^2}{2} h$
- square - s^2
- rectangle - lw
- rhombus - $\frac{pq}{2}$
- circle - πr^2
- SA - $(lw2)+(lh2)+(wh2)$

* Simplify expressions

- $7x - 5 + x - 8x$

  $5x - 5$

* Linear expressions

$(5x + 7) + (x + 2)$

$5x + x + 7 + 2$

$6x + 9$

,

$(4x + 6) - (-7x + 1)$

$4x + 6 + 7x - 1$

$11x + 5$

* Unit Rate

200 miles on 10 gallons

mpg

$\frac{200}{10} = \frac{20}{1}$

Part 6

*Multi-step equations

$\frac{6(x+2)}{6} = \frac{42}{6}$

$x + 2 = 42$

$-2 \quad -2$

$x = 40$

*Probability

*Sales Tax

17.75 ball if salestax is 6%

6% of 17.75 = 1.07

ST = 1.07

*Tip

19% on 18.60

0.19 × 18.60 = 3.52

Tip = 3.52

*Standard & scientific notation

9.52×10^{-2} in standard 562 in sci.

.0952 , 5.62×10^{2}

*scale factor

$\frac{x}{6} = \frac{18}{54}$

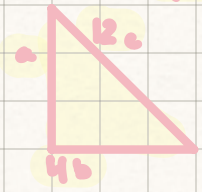
$\frac{54x}{54} = \frac{108}{54}$

$x = 2$

Part 7

*Pythagorean Theorem

$a^2 + b^2 = c^2$



$a^2 + 4^2 = 12^2$

$a^2 + 16 = 144$

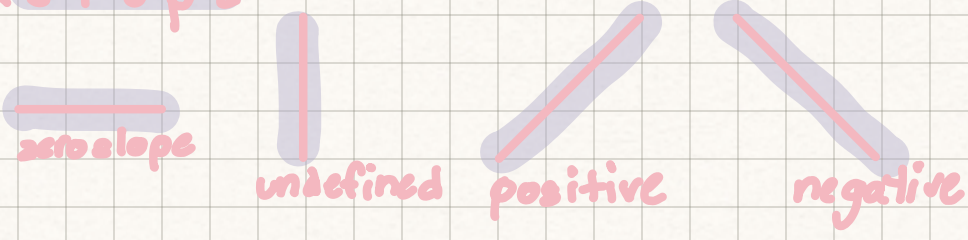
$-16 \quad -16$

$a^2 = \sqrt{128}$

between

$\sqrt{11}$ & $\sqrt{12}$

*slope

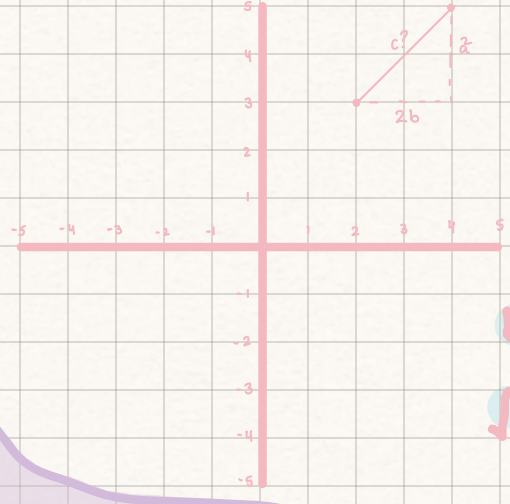


slope is $\frac{\text{rise}}{\text{run}}$ $\frac{y}{x}$

slope formula-

$$\frac{y^2 - y^1}{x^2 - x^1}$$

(pythagorean theorem)
(coordinate plane)



$a^2 + b^2 = c^2$

$2^2 + 2^2 = c^2$

$4 + 4 = c^2$

$\sqrt{8} = c$

between

$\sqrt{2}$ & $\sqrt{3}$