

Algebra 2A midterm Review

① To which set(s) of numbers does $-\frac{3}{5}$ belong?

$\mathbb{R}, \overline{\mathbb{Q}}, \mathbb{Q}, \mathbb{Z}, \mathbb{N}, \mathbb{W}$

② Insert $<$, $>$ or $=$ to make the sentence true.

a) $|3| \bigcirc |-2|$ d) $|-7-5| \bigcirc |6+3|$

b) $-\frac{2}{7} \bigcirc -\frac{3}{5}$

③ Find the opposite and reciprocal of 6.

④ Name the property

a) $3(x-5) = 3x-15$

b) $6+9 = 9+6$

c) $\sqrt{3} \cdot (5 \cdot 2) = (\sqrt{3} \cdot 5) \cdot 2$

⑤ Evaluate $-3x^3 - 4x^2 + 2x + 9$ when $x = -2$

⑥ Solve $7x + 3 = 5 + 2x$

⑦ Solve for y . $A = 6x^2y$

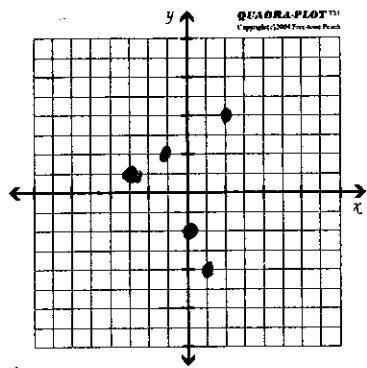
⑧ Solve. $|3x+2| \geq 14$

⑨ A bag contains 8 red marbles, 7 white and 12 blue.
Find $P(\text{red or white})$

⑩ The theoretical probability of an event is _____ a negative #.

Always, Sometimes, or Never

⑪ Find the domain and range.



⑫ Graph. $-4x + y = 3$

⑬ Graph. $-2x - y \geq 1$

⑭ Graph $y < |x - 3| - 1$

⑮ An independent system of 2 linear eqs.
_____ has an infinite # of solutions.

⑯ Plot $(-2, -4, 5)$ in 3-dimensional space.

Midterm Review Key

① $-\frac{3}{5}$ is rational and real

② a) $3 > -2$ c.) $|-12| = |9|$
 b) $-.28 > -.6$ $12 > 9$
 ↑
 closer to zero on # line

③ opposite = -6 reciprocal = $\frac{1}{6}$

- ④ a.) Distributive
 b.) commutative
 c.) associative

⑤ $-3(-2)^3 - 4(-2)^2 + 2(-2) + 9$
 $-3(-8) - 4(4) + 2(-2) + 9$
 $24 - 16 - 4 + 9$
 ⑬

⑥ $7x + 3 = 5 + 2x$
 $-2x \quad -2x$

$5x + 3 = 5$
 $-3 \quad -3$

$\frac{5x}{5} = \frac{2}{5}$

⑬ $x = \frac{2}{5}$

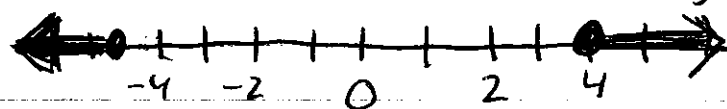
⑧ $|3x + 2| \geq 14$

$3x + 2 \geq 14$ or $3x + 2 \leq -14$
 $-2 \quad -2$ $-2 \quad -2$

$\frac{3x}{3} \geq \frac{12}{3}$ $\frac{3x}{3} \leq \frac{-16}{3}$

$x \geq 4$ or $x \leq -4\frac{2}{3}$

⑦ $A = \frac{6x^2y}{6x^2}$
 $\frac{A}{6x^2} = y$



$$9. \quad \frac{8}{27} + \frac{7}{27} = \frac{15}{27}$$

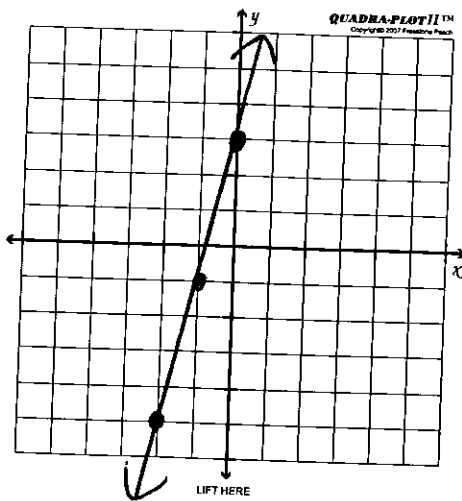
10. never (probability is always between 0 and 1 OR 0% and 100%)

11. ordered pairs:
 $\{(-3, 1), (-1, 2), (0, -2), (1, -4), (2, 4)\}$

Domain: $\{-3, -1, 0, 1, 2\}$ x-values
 Range: $\{1, 2, -2, -4, 4\}$ y-values

$$12. \quad \begin{array}{r} -4x + y = 3 \\ +4x \quad +4x \\ \hline y = 4x + 3 \end{array}$$

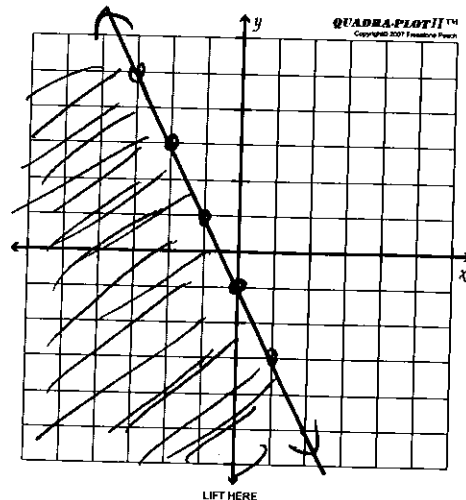
slope = $\frac{4}{1}$
 y-intercept = 3



$$13. \quad \begin{array}{r} -2x - y \geq 1 \\ +2x \quad +2x \\ \hline -y \geq 2x + 1 \\ \hline -1 \quad -1 \quad -1 \\ \hline y \leq -2x - 1 \end{array}$$

Flip
 \div by negative
 solid, shade below

$$m = -\frac{2}{1} \quad b = -1$$



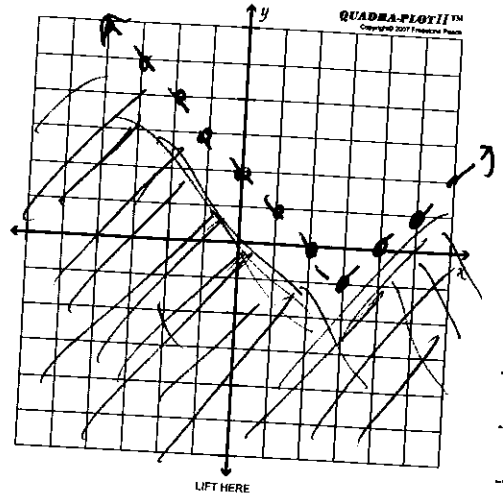
(14) $y < |x - 3| - 1$

vertex (3, -1)

slope 1

opens up

dashed, shade
below



(15) Independent system has 1 solution
so the blank filled in would
be NEVER

Dependent system always has
an infinite # of solutions.

Inconsistent has NO solution.

(16) To plot (-2, -4, 5) you go

back 2 on the x-axis
left 4 on the y-axis
and up 5 on the z-axis.

