Name:_____ Block:___

Quiz: Unit1. Review.
Arithmetic, PEMDAS, Lines

Group A.

Practice

There are 10 questions in this quiz, each of equal value.
Standard time for the test is 15 minutes .
No calculator is allowed. (accommodation excepted)

******** Since this is a PRACTICE, you actually have 20 questions.**********

1. $\frac{7}{4}-\frac{4}{7}=$ $\frac{49-16}{28}=\frac{33}{28}$

Answer: $\frac{33}{28}=\boxed{1\frac{5}{28}}$

2. $\frac{7}{4}\div\frac{4}{7}=$ $\frac{7}{4}\cdot\frac{7}{4}=\frac{49}{16}$

Answer: $\frac{49}{16}=\boxed{3\frac{1}{16}}$

3. $\frac{5}{8}\cdot\frac{4}{7x}\cdot\frac{8}{5}\cdot 2x=\frac{8}{7}$

Answer: $\frac{8}{7}=\boxed{1\frac{1}{7}}$

4. Solve

$(x-3)\cdot\frac{1}{4}=\frac{1}{2}\cdot(12-x)$ $\times 4$

$(x-3)=2(12-x)$

$x-3=24-2x$

$3x=27$

X= $\boxed{9}$

check: $(9-3)\frac{1}{4}=\frac{1}{2}(12-9)$

$\frac{6}{4}=\frac{3}{2}$

$\frac{3}{2}=\frac{3}{2}$ ✓

5. Simplify:

$(x-3)\cdot(x+2)-(x-1)=$

$x^2+2x-3x-6-x+1$

Answer: $\boxed{x^2-2x-5}$

6. Simplify:

$(5-x)\cdot(5+x)=$

$25-x^2$

Answer: $\boxed{25-x^2}$

7. $\frac{2x+3}{4} - \frac{3x-4}{3} =$

$$\frac{3\cdot(2x+3) - 4(3x-4)}{12} =$$

$$= \frac{6x+9-12x+16}{12} = \boxed{\frac{-6x+25}{12}}$$

8. $\frac{3x}{4} \div \frac{9x-6}{8} =$

$$\frac{3x}{4} \cdot \frac{8^{2}}{(9x-6)} =$$

$$\frac{6x}{9x-6} = \boxed{\frac{2x}{3x-2}}$$

9. $(2x^{-1})^2 \cdot \frac{3x^4}{(3x)^2} =$

$$4x^{-2} \cdot \frac{3x^4}{9x^2} = \frac{12}{9}\frac{x^4}{x^4}$$

$$= \boxed{\frac{4}{3}}$$

10. $\frac{-3^2 \cdot x^4 \cdot y^{-2}}{2x^5 \cdot (y^3)^4} =$

$$\frac{-9 \cdot x^4}{2x^5 \cdot y^{12} \cdot y^2} = \boxed{\frac{-9}{2} \cdot \frac{1}{x \cdot y^{14}}}$$

11. Solve:

$9 - 4x + (2x - 2) = 10 + x$

$$9 - 4x + 2x - 2 = 10 + x$$

$$-3x = 10 - 7$$

$$\boxed{x = -1}$$

check:

$$9 - 4\cdot(-1) + (-2-2) \stackrel{?}{=} 10 - 1$$

$$9 + 4 - 4 \stackrel{?}{=} 9$$

$$9 = 9 \checkmark$$

12. Solve:

$\frac{6x+9}{3} - (2x + 2) = 4 - x$

$$2x + 3 - 2x - 2 = 4 - x$$

$$-3 = -x$$

$$\boxed{x = 3}$$

check:

$$\frac{6\cdot 3 + 9}{3} - (2\cdot 3 + 2) \stackrel{?}{=} 4 - 3$$

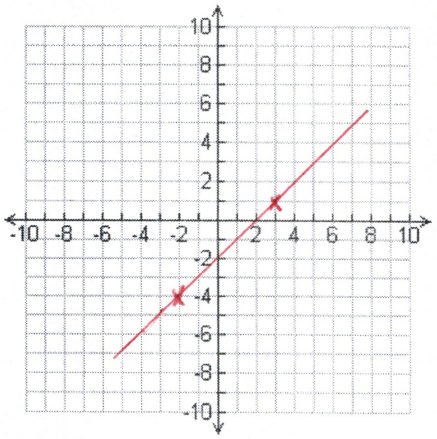
$$9 - 8 \stackrel{?}{=} 1$$

$$1 = 1 \checkmark$$

13.

(a) Plot the line going through the points:

$(-2,-4)$, $(3,1)$



(b) Specify the coordinates of:

X intercept $(2,0)$

Y intercept $(0,-2)$

(c) Write the equation of the line in slope-intercept form:

Answer: $y = 1 \cdot x - 2$

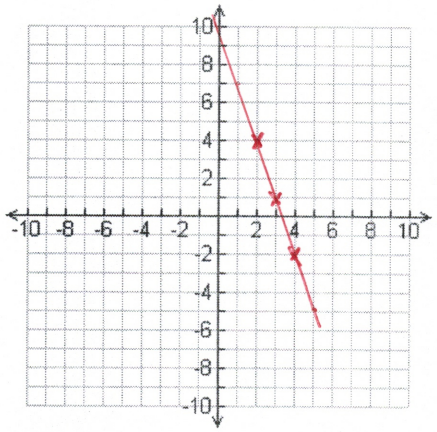
(d) Write the equation of the line in standard form:

Answer: $y - x + 2 = 0$

14.

(a) Plot the line going through the point

$(2,4)$, and has a slope of -3.



(b) Specify the coordinates of:

X intercept $(3\frac{1}{3}, 0)$

Y intercept $(0, 10)$

(c) Write the equation of the line in slope-intercept form:

Answer: $y = -3x + 10$

15.

(a) Find the line that goes through the point $(0,5)$,and is perpendicular to the line $y = 2x$.

$y = 2x \Rightarrow m = 2 \Rightarrow m_{\perp} = -\frac{1}{2}$

y intercept $(0,5)$

Answer: $y = -\frac{1}{2}x + 5$

(b) What is the intersection point of these two lines?

$y = -\frac{1}{2}x + 5$

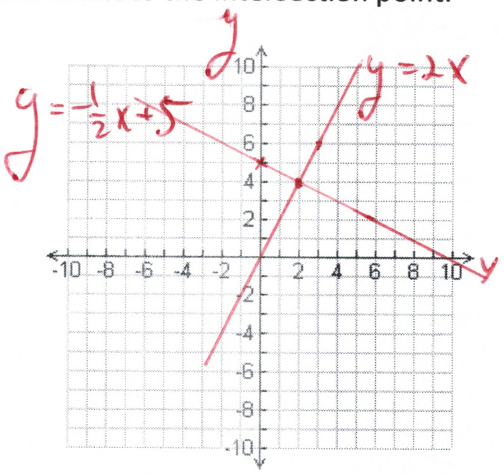
$y = 2x$

$2x = -\frac{1}{2}x + 5$

$2\frac{1}{2}x = 5$

Answer: $x = 2, y = 4$

(c) Plot the two lines, and indicate the intersection point.



16. What is the slope of the line described by

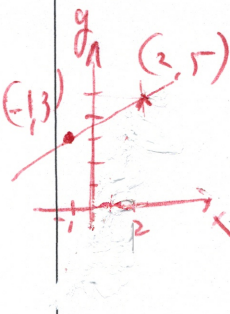
$$3y + 2x = 5$$

$3y = -2x + 5$

$y = -\frac{2}{3}x + \frac{5}{3}$

m= $\boxed{-\frac{2}{3}}$

17. What is the slope of a line perpendicular to the line that goes through the two points $(2,5)$ and $(-1,3)$?



$(2,5)$ $(-1,3)$

$m = \frac{5-3}{2-(-1)} = \frac{2}{3} \Rightarrow m_{\perp} = -\frac{3}{2}$

m= $\boxed{-\frac{3}{2}}$

18. Do the following two lines meet? If they do, what is the intersection point?

Line 1: $3y + 2x = 5$
Line 2: $6y = 5 - 4x$

Line 1: $3y = -2x + 5$

$y = \boxed{-\frac{2}{3}}x + \frac{5}{3}$

Line 2: $6y = -4x + 5$

$y = \boxed{-\frac{4}{6}}x + \frac{5}{6}$

Meeting= Yes / NO

Intersection point= ~

$-\frac{4}{6} = -\frac{2}{3} \Rightarrow$ same slope

parallel lines!

19. Calculate the following absolute value expressions:

(a) $|-7| = \boxed{7}$

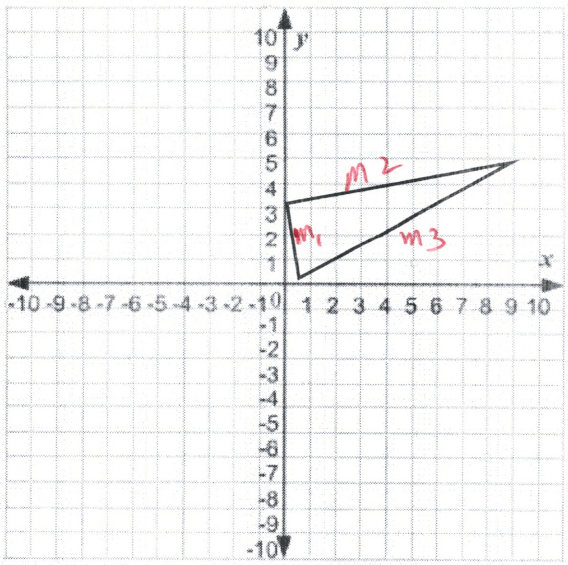
(b) $|3| = \boxed{3}$

(c) $|3 - 7| = |-4| = \boxed{4}$

(d) $3 - |7| = 3 - 7 = \boxed{-4}$

20. The picture below describes a right triangle. The 3 sides have slopes denoted as m_1, m_2, m_3.

What can you say about the value of the product $(m_1 \cdot m_2 \cdot m_3)$? See 4 options below. Explain your answer.



$m_1 \cdot m_2 = -1$

$0 \leq m_3 \leq 1$

$-1 < m_1 \cdot m_2 \cdot m_3 < 0$

a) $-\infty < (m_1 \cdot m_2 \cdot m_3) \leq -1$
b) $-1 \leq (m_1 \cdot m_2 \cdot m_3) \leq 0$
c) $0 \leq (m_1 \cdot m_2 \cdot m_3) \leq 1$
d) $1 \leq (m_1 \cdot m_2 \cdot m_3) < \infty$

=== End ====