USE PENCIL, SHOW WORK, ERASE ERRORS

NO CALCULATORS, CELL PHONES, ETC.

1. Write the value of each expression and Place each on the number line if possible.

A = $2^3+3-14+5$ = 2

$8+3-14+5$

$11-14+5$

$-3+5$

B = $(-\frac{7}{2})(\frac{2}{5})$ = $-\frac{7}{5}$

-1.4

C = $(3-8)^0$ = 1

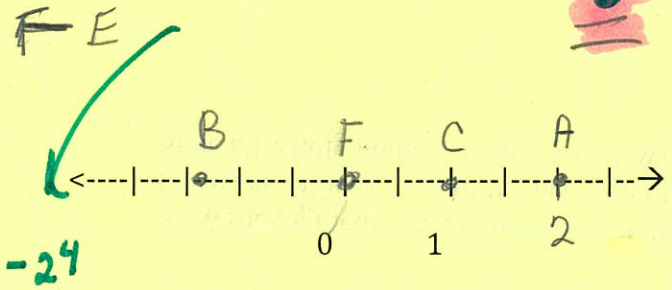
D = $(3+6) \div (2-2)$ =

$\frac{9}{0}$ undef

E = -2^4 = -16

F = 3(4) −2(6) =

12 − 12 = 0



-24

order of ops:

exp: $2^4 = 16$ mult $(-)(16) = -16$

2. a. Solve for x: 8x-2(x-4) = 4x + 14

$8x-2x+8 = 4x+14$

$6x+8 = 4x+14$

$2x = 6$

$x = 3$

b. Check your solution

Must plug into original!

$8(3)-2(3-4) \stackrel{?}{=} 4(3)+14$

$24-2(-1) \stackrel{?}{=} 12+14$

$24+2 \stackrel{?}{=} 12+14$

$26 = 26$ ✓

3. Evaluate each expression for

x = -2 and y = 3

a. $xy^2 - x^3$

$(-2)(3)^2-(-2)^3$

$-2 \cdot 9 - (-8)$

$-18+8 = -10$

b. $x + 2y - \frac{3x}{y}$

$-2+2(3)-\frac{3(-2)}{3}$

$-2+6+2$

6

4. Write a proportion and solve for x.

If a 5-foot tree casts an 8-ft shadow, what size tree casts a 32-ft shadow?

a) Proportion:

tree / shadow $\frac{5\text{ ft}}{8\text{ ft}} = \frac{x}{32\text{ ft}}$

b) solution (include units)

$5 \cdot 32 = 8x$

$\frac{5 \cdot 32^4}{8_1} = x$

20 ft

5. Given these points A (3,-2) and B(1,4)

a) Find the exact distance between them.

$d = \sqrt{(3-1)^2 + (-2-4)^2}$

$\sqrt{2^2 + (-6)^2} = \sqrt{4+36}$

$= \sqrt{40}$

b) The answer is between which two integers?

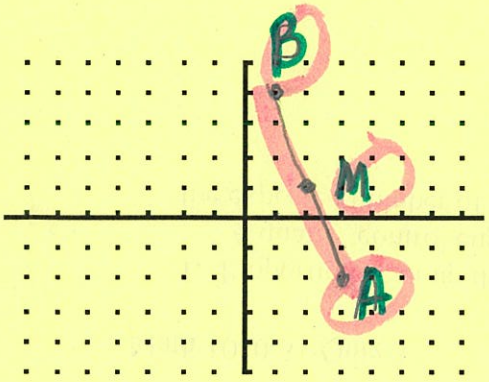
6 and 7

c) Determine the midpoint (M) of the segment AB.

Midpt: $\left(\frac{3+1}{2}, \frac{-2+4}{2}\right)$

$\left(\frac{4}{2}, \frac{2}{2}\right) = (2, 1)$

d) On this grid, plot the points and the midpoint. Label them.



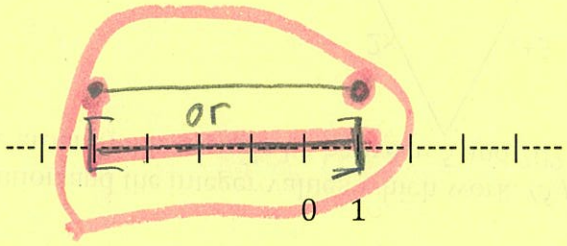
6. . Solve and graph the solution $|2x+3| \leq 5$

< means between!

$-5 \leq 2x+3 \leq 5$

$-8 \leq 2x \leq 2$

$-4 \leq x \leq 1$



7. Simplify this expression and put the answer in standard order.

$2(x-3)-5(x^2+2)+3x^3-6x^2$

$2x-6-5x^2-10+3x^3-6x^2$

$3x^3-11x^2+2x-16$

Evaluate the expression for x = -1

$3(-1)^3-11(-1)^2+2(-1)-16$

$-3-11-2-16$

$-14-2-16$

$-16-16$

-32

$\frac{1}{0}$ is undefined. Vertical line → no slope → undefined

8. Write the slope of each of these lines:

a) One containing (-5,4) and (-5,3)

$m = \frac{\Delta y}{\Delta x} = \frac{4-3}{-5-(-5)} = \frac{1}{0}$ undef

b) 3x-2y=5

$-2y = 5 - 3x$ $m = 3/2$

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

c) A horizontal line

$m = 0$ Zero slope is not no slope.

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

$m = -2/3$

9. Show work on these percent problems.

a) What percent of 72 is 18?

$x \cdot 72 = 18$ Must show work

$x = \frac{18}{72} = \frac{9}{36} = \frac{1}{4} = 0.25$

$= 25\%$

b) 35 is 5% of what?

$35 = .05x$

$x = \frac{35}{.05} = \frac{3500}{5} = 700$

10. Given this equation, plot the x-intercept and the y-intercept and two other points.

$y = 2 - 3x$

a) x-intercept (State as ordered pair.)

$y = 0$

$2 - 3x = 0$

$2 = 3x$

$x = 2/3$

$(2/3, 0)$

b) y-intercept (State as ordered pair.)

$x = 0 \quad y = 2 - 3 \cdot 0 = 2$

$(0, 2)$

c) Other points (State as ordered pairs.)

$(1, -1)$ $y = 2 - 3(1) = -1$

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

d) Graph points and draw the equation.

4 pts