


Please find the distance, midpoint, and slope between the following points:

$(-5, 6)$ and $(1, -2)$

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

$$\text{midpoint} : \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$\text{slope} : \frac{y_2 - y_1}{x_2 - x_1}$$



x_1 y_1 x_2 y_2
 $(-5, 6)$ $(1, -2)$

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

$$d = \sqrt{(-5 - 1)^2 + (6 - (-2))^2}$$

$$d = \sqrt{(-6)^2 + (8)^2}$$

$$d = \sqrt{36 + 64}$$

$$d = \sqrt{100}$$

$$d = 10$$

$(-5, 6)$ $(1, -2)$ Midpoint

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$\left(\frac{-5 + 1}{2}, \frac{6 + (-2)}{2} \right)$$

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

$$(-2, 2)$$

SLOPE

	x_1	y_1	x_2	y_2
	$(-5, 6)$		$(1, -2)$	

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - 6}{1 - (-5)} = \frac{-8}{6}$$

$$\left(\frac{-4}{3}\right) \text{ reduce}$$

9/29 How I use order of operations (Pemdas)?

$$\text{Ex. } [2(10-4)^2 + 3] \div 5$$

$$[2(6)^2 + 3] \div 5$$

$$[2 \cdot 36 + 3] \div 5$$

$$[72 + 3] \div 5$$

$$75 \div 5$$

$$(15)$$

Ex. Evaluate $\frac{2^3 + 2(-4)(-3)}{(-3)^2 - 5}$

$$= \frac{8 + 2(-4)(-3)}{-9 - 5}$$

$$= \frac{10(-4)(-3)}{-14}$$

$$= \frac{20}{-14}$$

Don't add 8+2.
Multiply 1st!

$8 + 2(-4)(-3)$
should be

$\frac{8 + 24}{}$
should be +9

$$= \frac{60}{-7}$$

$$= \frac{8+24}{9-5}$$

$$= \frac{32}{4}$$

$$8$$

Ex. Evaluate

$$[384 - 3(7-2)^3] \div 3$$

$$[384 - 3 \cdot 5^3] \div 3$$

$$[384 - 3 \cdot 125] \div 3$$

$$(384 - 375) \div 3$$

$$9 \div 3$$

$$3$$

Evaluate expressions

$$x^2 - y(x+y) \quad \text{if } x=8 \text{ and } y=1.5$$

$$8^2 - 1.5(8+1.5)$$

$$8^2 - 1.5(9.5)$$

$$64 - 14.25 = 49.75$$

Ex. $\frac{8xy + z^3}{y^2 + 5}$ if $x=5$,
 $y=-2$,
 $z=-1$

Solution:

$$\frac{8(5)(-2) + (-1)^3}{(-2)^2 + 5}$$

$$\frac{8(s)(-2) + -1}{4 + s}$$

$$\frac{-81}{9} = \boxed{-9}$$

P. 8:
4-33, 38-47

Check odd answers
as you go!