

**Complete in this handout:****1. Review units:**

$$1 \text{ m} = 10 \text{ dm} = 100 \text{ cm} = 1000 \text{ mm}$$

$$1 \text{ m}^2 = 100 \text{ dm}^2 = 10,000 \text{ cm}^2 = 1,000,000 \text{ mm}^2$$

$$100 \text{ mm} = \quad \text{m}$$

$$10 \text{ dm} = \quad \text{mm}$$

$$5 \text{ cm} = \quad \text{dm}$$

$$10 \text{ cm}^2 = \quad \text{dm}^2$$

$$5 \text{ dm}^2 = \quad \text{cm}^2$$

$$30 \text{ cm}^2 = \quad \text{dm}^2$$

**2. Given three vectors**  $\vec{x}=(-1,3)$  ,  $\vec{y}=(3,2)$  , and  $\vec{z}=(2,-1)$  **calculate the coordinates of the following vectors:**

$$\frac{1}{2}\vec{x}=(\quad, \quad)$$

$$-3\vec{y}=(\quad, \quad)$$

$$1\frac{2}{3}\vec{z}=(\quad, \quad)$$

$$2\vec{x} - \vec{z}=(\quad, \quad)$$

$$\vec{z} + \frac{1}{2}\vec{x}=(\quad, \quad)$$

$$1\frac{1}{2}\vec{x} + \frac{1}{2}\vec{y}=(\quad, \quad)$$

**3. One pipe can fill up a pool in 3 hours. The second pipe can do the same in 5 hours. At noon the first pipe was open. An hour later the second pipe was open as well. When will the pool fill up?**


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**Answer: 2:15 PM****4. A car can make it from town A to town B in 3 hours. A truck can cover the same distance in 5 hours. At noon the car leaves from town A towards B. One hour later the truck leaves from B towards A. When will the car meet the truck?**


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6. Compare the solutions and the answers for problems 3 and 4. Make a conclusion.

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7. Make two of your own twin-problems like problems 3 and 4; write them down below. Write down the solution for any of them here.

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**Complete in your notebook**

1. Show that:

$$\frac{1\frac{1}{3} - \frac{2}{5} \cdot 1\frac{2}{3}}{1\frac{1}{4} - (\frac{1}{6} + \frac{1}{12})} = \frac{2}{3}$$

3. Solve the equations:

a).  $(2y - 4) : 3 + (\frac{1}{6}y + \frac{5}{6}) \cdot 2 = \frac{2}{3}$  (Answer:  $y = \frac{1}{3}$ )

\* b).  $|2x + 1| = |3 - x|$  **Hint:** ( $|x| = |y|$  IF  $x = y$  OR  $x = -y$ ) Answer:  $\{-4, \frac{2}{3}\}$