

Unit 1 Practice Test

Simplify.

$$1. \frac{21+(12-3*6)}{(-1-4)^2}$$

$$\frac{21+(-6)}{(-5)^2} = \frac{15}{25}$$

$$\boxed{\frac{3}{5}}$$

Solve.

$$2. \frac{x+4}{5} = \frac{x-6}{3}$$

$$5(x-6) = 3(x+4)$$

$$5x-30 = 3x+12$$

$$2x = 42$$

$$\boxed{x=21}$$

Solve for t.

$$3. 3y + ct = h$$

$$\frac{ct}{c} = \frac{h-3y}{c}$$

$$\boxed{t = \frac{h-3y}{c}}$$

$$4. y - 8b + 3tz - 6ab = 0$$

$$\frac{3tz}{3z} = \frac{6ab + 8b - y}{3z}$$

$$\boxed{t = \frac{6ab + 8b - y}{3z}}$$

Use dimensional analysis.

5. Convert 27 gallon per hour into pints per second

$$\frac{27 \cancel{\text{gallons}}}{1 \cancel{\text{hour}}} \cdot \frac{8 \text{ pints}}{1 \cancel{\text{gallon}}} \cdot \frac{1 \cancel{\text{hour}}}{3600 \text{ seconds}} = \boxed{\frac{0.06 \text{ pints}}{\text{second}}}$$

6. How fast in kilometers per minute is 63,859,050 centimeters per week? Round to the nearest tenths place.

$$\frac{63,859,050 \cancel{\text{cm}}}{\text{week}} \cdot \frac{1 \text{ km}}{100000 \cancel{\text{cm}}} \cdot \frac{1 \cancel{\text{week}}}{7 \text{ days}} \cdot \frac{1 \cancel{\text{day}}}{24 \text{ hours}} \cdot \frac{1 \cancel{\text{hour}}}{60 \text{ minutes}}$$

$$\boxed{= 0.6 \text{ km/min}}$$

7. Jenni's mom gave her \$15 to run to the store to get some donuts and eggs for breakfast. The eggs were on sale for \$3.28.

$$.75x + 3.28 \leq 15$$

- a. What is the VOCAB term for 3.28? *Constant*
- b. What is the VOCAB term for .75? *Coefficient*
- c. What does the .75 represent IN CONTEXT?
the cost of one donut.
- d. What does the x represent IN CONTEXT?
of donuts purchased
- e. What does the .75x represent IN CONTEXT?
total cost of donuts

Solve. VERIFY YOUR STEPS.

8. $\frac{-2+11x}{-4} > 6$

$-2+11x < -24$ *Mult POI*

$11x < -22$ *Add POI*

$x < -2$ *Div POI*

Write the equation or inequality, then solve.

9. My mom gives me \$5.00 for every goal I score in hockey, but takes money away for my penalties. After losing \$12 in penalties this season, I still ended up with \$68. How many goals did I score this year?

$68 = 5x - 12$
+12 *+12*

$\frac{80}{5} = \frac{5x}{5}$

$x = 16$

16 goals were scored

10. 4 times the sum of 9 and some number is at least 8 less than 6 times that number.

$4(9+x) \geq 6x-8$

$36+4x \geq 6x-8$

$44 \geq 2x$

$22 \geq x$