Literal Equations – Worksheet #2

SHOW ALL WORK!!

Regular Equations

1a) \[ 43 - 2x = 11 \]
\[ \frac{-43}{-43} \]
\[ -2x = -32 \]
\[ \frac{-2}{-2} \]
\[ x = 16 \]

2a) \[ 23 + 4x - 34 = -11 \]
\[ -11 + 4x = -11 \]
\[ +11 +11 \]
\[ 4x = 0 \]
\[ \frac{4}{4} \]
\[ x = 0 \]

3a) \[ 3(2x - 7) = 6 \]
\[ 6x - 21 = 6 \]
\[ +21 +21 \]
\[ 6x = 27 \]
\[ \frac{6}{6} \]
\[ x = \frac{9}{2} \text{ or } 4\frac{1}{2} \text{ or } 4.5 \]

Literal Equations

1b) Solve for \( x \):
\[ 3y + 2x = -1 \]
\[ \frac{-3y}{-3y} \]
\[ \frac{2x}{2} = \frac{-1-3y}{2} \]
\[ x = \frac{-1-3y}{2} \]

2b) Solve for \( k \):
\[ 3-3k + 7k = 5b \]
\[ \frac{3}{-3} \]
\[ \frac{4k}{4} \]
\[ k = \frac{5b-3}{4} \]

3b) Solve for \( b \):
\[ \frac{1}{2}(4a + 10b) = c \]
\[ \frac{2a + 5b}{-2a} \]
\[ \frac{5b}{5} \]
\[ b = \frac{c - 2a}{5} \]

Formulas can be manipulated through the process of solving literal equations.

4) Solve for \( h \):
\[ A = bh \]
\[ \frac{A}{b} \]
\[ h = \frac{A}{b} \]
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5) Solve for b: \( A = \frac{1}{2}bh \) (Area of a triangle)
\[
\frac{2A}{h} = bh
\]
\[
b = \frac{2A}{h}
\]

6) Solve for r: \( C = 2\pi \) (Circumference of a circle)
\[
r = \frac{C}{2\pi}
\]

7) Solve for w: \( P = 2L + 2W \) (Perimeter of a rectangle)
\[
\frac{P-2L}{2} = \frac{2W}{2}
\]
\[
w = \frac{P-2L}{2}
\]

8) Solve for t: \( D = rt \) (Linear motion)
\[
t = \frac{D}{r}
\]

9) Solve for C: \( F = \frac{9}{5}C + 32 \) (Temperature conversions)
\[
\frac{5}{9}(F-32) = \frac{9}{5}C \cdot \frac{5}{9}
\]
\[
C = \frac{\frac{5}{9}(F-32)}{}
\]