Solving for a Variable

Name: Key

7th Grade Math

Solve for the indicated variable:

1. $st = 6$ for s

$\frac{st}{t} = \frac{6}{t}$

$s = \frac{6}{t}$

2. $m - 4n = 8$ for m

$+4n \quad +4n$

$m = 4n + 8$

3. $\frac{f+4}{g} = 6$ for f

$g \cdot \frac{f+4}{g} = 6 \cdot g$

$f + 4 = 6g$

$-4 \quad -4$

$f = 6g + -4$

4. $c = \frac{10}{a}$ for a

$a \cdot c = \frac{10}{a} \cdot a$

$ac = 10$

$\frac{ac}{c} = \frac{10}{c}$

$a = \frac{10}{c}$

5. $\frac{m}{n} = p$ for n

$n \cdot \frac{m}{n} = p \cdot n$

$\frac{m}{p} = \frac{pn}{p}$

$\frac{m}{p} = n$

6. $\frac{x-2}{y} = z$ for y

$y \cdot \frac{x-2}{y} = z \cdot y$

$\frac{x-2}{z} = \frac{zy}{z}$

$\frac{x-2}{z} = y$

7. $s = 180n - 360$ for n

$+360 \quad +360$

$\frac{s+360}{180} = \frac{180n}{180}$

$\frac{s+360}{180} = n$

8. $PV = nRT$ for R

$\frac{nT}{nT} \quad \frac{nT}{nT}$

$\frac{PV}{nT} = R$

9. $3x + y = 2$ for y

$-3x \quad -3x$

$y = -3x + 2$

10. $\frac{5}{b} = 17x$ for b

$b \cdot \frac{5}{b} = 17x \cdot b$

$\frac{5}{17x} = \frac{17xb}{17x}$

$\frac{5}{17x} = b$

11. The equation Force = mass x acceleration (F = ma) shows us that the acceleration of an object is directly proportional to the force acting of the object. Solve the equation F = ma for "a." Then find the acceleration of a 2 kg ball pushed forward with a force of 80 N.

$\frac{F}{m} = \frac{ma}{m}$

$\frac{F}{m} = a$

$a = \frac{80\ N}{2\ kg} = 40\ \frac{m}{sec^2}$

$a = 40\ \frac{m}{sec^2}$

12. The equation Pressure = Force ÷ Area $(P = \frac{F}{A})$ shows us that pressure and area are inversely related. Solve the equation $P = \frac{F}{A}$ for "F." Then find the force needed create a pressure of 100 Pa over an area of 0.5 m^2.

$P = \frac{F}{A}$

$A \cdot P = \frac{F}{A} \cdot A$

$AP = F$

$F = .5m^2 \cdot 100\ Pa$

$F = 50\ N$