

# Math 9 Review (written)

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12:39 PM

$$1) a) 0.5x = 1.6 + 0.25x$$

$$\frac{0.25x}{0.25} = \frac{1.6}{0.25}$$

$$x = 6.4$$

$$b) \left( \frac{1}{3}y - \frac{1}{2} = \frac{1}{6}y \right) 6$$

$$2y - 3 = y$$

$$y = 3$$

$$c) \left( \frac{3}{4}(d+2) = \frac{2}{3}d \right) 12$$

$$9(d+2) = 8d$$

$$9d + 18 = 8d$$

$$d + 18 = 0$$

$$d = -18$$

$$d) \left( \frac{5p}{6} - 5 = \frac{1}{2}p + 2 \right) 6$$

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

$$2p - 30 = 12$$

$$2p = 42$$

$$p = 21$$

$$e) \frac{1}{2}(x+1) = \frac{1}{3}(x-1)$$

$$\left( \frac{1}{2}x + \frac{1}{2} = \frac{1}{3}x - \frac{1}{3} \right) 6$$

$$3x + 3 = 2x - 2$$

$$x + 3 = -2$$

$$x = -5$$

$$f) \frac{2x-1}{2} = \frac{2x+1}{3}$$

$$3(2x-1) = 2(2x+1)$$

$$6x - 3 = 4x + 2$$

$$2x - 3 = 2$$

$$2x = 5$$

$$x = \frac{5}{2}$$

$$g) \left( \frac{y}{2} - \frac{y}{3} < \frac{y}{4} + 1 \right) 30$$

$$h) 2.6(j-1) + 0.7 \geq 1.2(3-j) + 0.2$$

$$\begin{aligned} & \text{2} \quad \text{3} \quad \text{5} \quad / \\ 15y - 10y & < 6y + 30 \end{aligned}$$

$$5y < 6y + 30$$

$$-y < 30$$

$$y > -30$$

$$10(2.6j - 2.6 + 0.7 \geq 3.6 - 1.2j + 0.2)$$

$$26j - 26 + 7 \geq 36 - 12j + 2$$

$$26j - 19 \geq 38 - 12j$$

$$38j - 19 \geq 38$$

$$38j \geq 57$$

$$j \geq 3$$

$$i) 3 - \frac{1}{2}(4-x) = 2 + \frac{1}{4}(5+x)$$

$$3 - 2 + \frac{1}{2}x = 2 + \frac{5}{4} + \frac{1}{4}x$$

$$\left(1 + \frac{1}{2}x = \frac{13}{4} + \frac{1}{4}x\right) 4$$

$$4 + 2x = 13 + x$$

$$x + 4 = 13$$

$$\underline{\underline{x = 9}}$$

$$j) \left(\frac{2x+1}{2} + \frac{4x-5}{3} = -1\right) 6$$

$$3(2x+1) + 2(4x-5) = -6$$

$$6x + 3 + 8x - 10 = -6$$

$$14x - 7 = -6$$

$$14x = 1$$

$$x = \frac{1}{14}$$

$$10) \begin{aligned} \# \text{ of nickels} &= n \\ \text{pennies} &= n+76 \end{aligned}$$

$$\begin{aligned} \text{value nickels} &= 5n \\ \text{pennies} &= 1(n+76) \end{aligned}$$

$$5n = n + 76$$

$$4n = 76$$

$$n = 19$$

a) 19 nickels  
76 pennies

b) \$1.52

11) let # weeks be  $n$ .


$$28.50 + 8.75n = 104.75 - 6.50n$$

$$28.50 + 15.25n = 104.75$$

$$15.25n = 76.25$$

$$n = 5$$

5 weeks

12.  $d = rt$  

time for to walk there be  $n$   
home be  $40 - n$

~~$d = \text{rate} \times \text{time}$~~

$\leftarrow n + 40 - n = 40 \text{ min}$   ~~$\times$  since  $d$  there and  $d$  back cere =~~

$$4.5(n) = 3.5(40 - n)$$

$$4.5n = 150 - 3.5n$$

$$8n = 150$$

$$n = 22.5$$

a) it takes 22.5 min.

$$\begin{aligned} \text{b) } d &= (4.5)(22.5 \div 60) \\ &= 1.68 \text{ km} \end{aligned}$$

13. let height of father be  $n$ .

$$\frac{4}{5}n + 6 = \frac{5}{6}n$$

$\uparrow$  ht of Alan + 6 =  $\uparrow$  Ben's ht

$$6 = \frac{1}{30}n$$

$$n = 180 \text{ cm.}$$

14)	d	r	t
up river		$16.5 - x$	5
down river		$16.5 + x$	2

$$d = rt$$

$$5(16.5 - x) = 2(16.5 + x)$$

$$82.5 - 5x = 33 + 2x$$

$$82.5 = 33 + 7x$$

$$49.5 = 7x$$

$$x = 7.1 \text{ km/h}$$

16 a)  $6x - 12$

b)  $-2x + 2 + 2 - 2x$

$-4x + 4$

c)  $8x^2 - 12 - 2x^2 + 2x + 2$

$6x^2 + 2x - 10$

d)  $3x - 2x^2 + 2x$

$5x - 2x^2$

e)  $4x^2 - 4x - 3x^2 - 6x$

$x^2 - 10x$

f)  $3x^3 - 6x^2 - 3x^2 + 3x$

$3x^3 - 9x^2 + 3x$

g)  $-2x^2 + x - 1$


h)  $18x^4$

i)  $2x^3 + 6x^3$

$8x^3$

j)  $3x^2 - 2x + 1 - 2x^2 + x + 6x^2$

$7x^2 - x + 1$

17.   $2x^2 - 2x$

$$P = 2(2x - 3 + 2x^2 - 2x)$$

$$= 2(2x^2 - 3)$$

$$= \underline{\underline{4x^2 - 6}}$$