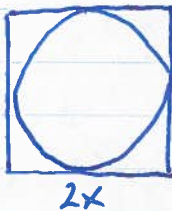


16a)



$$b) A = \pi x^2 \quad A = 4x^2$$

$$\text{ratio } \frac{\pi x^2}{4x^2}$$

c)  $x \neq 0$

d)  $\pi/4$

e) 79%

17 a)  $p = -2$  (-2kg) doesn't need to be considered.b) 0 gives  $\frac{0}{2}$  (yield of 0)c) yield  $\rightarrow$  900 Kg

$$18 \quad v = \frac{d}{t} \quad t = \frac{d}{v} \quad a) \frac{100}{29} = \frac{50}{9} \quad b) \frac{100}{p-4}$$

$$q \neq 0 \quad p \neq 4$$

19a)  $350 + 30(9) = 620$

b)  $C = \frac{350 + 9n}{n}$

c)  $C = \frac{350 + 9(30)}{30} = \$20.67$

20 a) No. Terri divided numerator by 5 and part of denominator by 5

b)  $\frac{5}{m+5} = \frac{1}{m+1}$  let  $m=1$   $\frac{5}{6} = \frac{1}{2}$  (not true)

21. a)  $\frac{3x}{4} \rightarrow \frac{15x}{20}$  by multiplying by  $\frac{5}{5}$

b)  $\frac{3x}{4} \rightarrow \frac{3x^2 - 6x}{4x - 8}$  by multiplying by  $\frac{x-2}{x-2}$

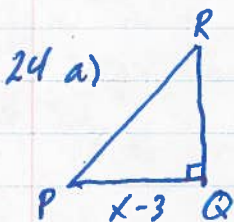
22. a)  $\frac{x-2}{3} \rightarrow \frac{4x-8}{12}$

b)  $\frac{x-2}{3} \rightarrow \frac{3x-6}{9}$

$$22c) \frac{x-2}{3} \rightarrow \frac{(x-2)(2x+5)}{6x+15} = \frac{2x^2+x-10}{6x+15}$$

$$23a) \frac{5}{1} = \frac{25b}{5b} \quad b) \frac{x+1}{3} = \frac{4a^2b(x+1)}{12a^2b} = \frac{4a^2bx+4a^2b}{12a^2b}$$

$$c) \frac{a-b}{7x} = \frac{-2a+2b}{-14x} \quad \text{or} \quad \frac{2b-2a}{-14x}$$



b)  $A = \frac{1}{2}bh$   
 $x^2 - x - 6 = \frac{1}{2}(x-3)PQ$   
 $2x^2 - 2x - 12 = (x-3)PQ$

$$PQ = \frac{2x^2 - 2x - 12}{x-3}$$

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

$$PQ = 2(x+2)$$

c)  $x \neq 3$

$$25a) \frac{6x^2 - x - 1}{9x^2 - 1} = \frac{(3x+1)(2x-1)}{(3x+1)(3x-1)}$$

$$= \frac{2x-1}{3x-1} \quad x \neq \pm \frac{1}{3}$$

$$b) \frac{2n^2 + n - 15}{5n - 2n^2} = \frac{(2n-5)(n+3)}{n(5-2n)}$$

$$= \frac{-(n+3)}{n}$$

$$= \frac{-n-3}{n} \quad n \neq \frac{5}{2}, 0$$

$$26a) \frac{a^2 - a - 20}{(a-5)(a+4)} \rightarrow \frac{(x+2-5)(x+2+4)}{(x+3)(x-3)} \quad \frac{(x-3)(x+6)}{(x+3)(x-3)} \quad \frac{x+6}{x+3}$$

\*  $a = (x+2)$

$$x \neq \pm 3$$

$$\begin{aligned}
 26b) \quad & 4 \frac{[(x+3)(x-3)]^2 - (x+3)^2}{(x+3)^2} = 4(x-3)^2 - 1 \\
 & = 4x^2 - 24x + 35 \\
 & = (2x-7)(2x-5) \quad x \neq -3
 \end{aligned}$$

$$\begin{aligned}
 c) \quad & a^2 - 8a + 12 \rightarrow \frac{(x^2 - x - 6)(x^2 - x - 2)}{[(x+2)(x-2)]^2 - (x-2)^2} \quad \frac{(x-3)(x+2)(x+2)(x+1)}{(x+2)(x+2)(x-2)(x-2) - (x-2)(x+2)} \\
 a = x^2 - x & \quad \frac{(x-3)(x+2)(x+1)}{(x-2)[(x+2)(x+2) - 1]} \quad \frac{(x-3)(x+2)(x+1)}{(x-2)(x^2 + 4x + 3)} \quad \frac{(x-3)(x+2)(x+1)}{(x-2)(x+1)(x+3)} \\
 & \quad \frac{(x-3)(x+2)}{(x-2)(x+3)} \quad x \neq 2, -3, -1
 \end{aligned}$$

$$\begin{aligned}
 d) \quad & a^2 - 10a + 9 \rightarrow \frac{(x^2 + 4x + 4 - 9)(x^2 + 4x + 4 - 1)}{4x^2 + 4x + 1 - x^2 - 4x - 4} \quad \frac{(x^2 + 4x - 5)(x^2 + 4x + 3)}{3x^2 - 3} \\
 a = x^2 + 4x + 4 & \quad \frac{(x+5)(x-1)(x+1)(x+3)}{3(x+1)(x-1)} \quad \frac{(x+5)(x+3)}{3} \quad x \neq \pm 1
 \end{aligned}$$