Maths homework / exam

1. a. $8 - 8x = 16 \quad -8$

$-8x = 8$

$x = -1$

b. $7x - 5x = x + 8$

$2x = x + 8$

$x = 8$

c. $4(x-2) + 2(x+3) = 6$

$4x - 8 + 2x + 6 = 6$

$4x + 2x + 6 = 14$

$6x = 12$

$x = 2$

d. $6x - 4(3 - 2x) = 5(x-4) - 10$

$6x - 12 + 8x = 5x - 20 - 10$

$14x - 12 = 5x - 30$

$14x = 5x - 18$

$9x = -18$

$x = -2$

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

$-3x + 6 - 5x + 5 = 2x - 4 - 5x + 5$

$-8x + 11 = -3x + 1$

$-5x + 11 = 1$

$11 = 1 + 5x$

$10 = 5x$

$x = 2$

f. $\frac{3x}{4} + \frac{5x}{2} = 13$

$\frac{3x}{8} + \frac{20x}{8} = 13$

$\frac{26x}{8} = 13$

$26x = 104$

$x = 4$

g. $\frac{x-8}{5} + \frac{8}{5} = -\frac{x}{3}$

$\frac{x-16}{5} = -\frac{x}{3}$

$3\left(\frac{x+16}{5}\right) = x$

$\frac{3x-48}{15} = x$

$15x = 3x - 48$

$12x = -48$

$x = -4$

h. $\frac{3x+7}{6} + \frac{x+7}{6} = \frac{x+6}{4}$

$\frac{4x+14}{6} = \frac{x+6}{4}$

$4\left(\frac{4x+14}{6}\right) = x+6$

$\frac{16x+56}{24} = x+6$

$16x + 56 = 24(x+6)$

$16x + 56 = 24x + 6$

$56 = 8x + 6$

$50 = 8x$

$x = 6.25$

i $0.05x + 0.12(x + 5000) = 940$

$0.17x + 0.12x + 600 = 940$

$0.29x = 340$

$x = 0.00085$

j $0.05x + 0.10(200 - x) = 0.45x$

$0.05x + 20 - 0.1x = 0.45x$

~~0.15x~~ $0.05x + 20 = 0.55x$

$20 = 0.5x$

$10 = x$

2.

a. $d = rt$ find t.

$\frac{d}{r} = t$

b. $A = \frac{1}{2}bh$ find b.

$\frac{1}{2}A = bh$

$\frac{0.5A}{h} = b$

c. $V = \frac{1}{3}\pi r^2 h$ find h

$\frac{1}{3}V = \pi r^2 h$

$\frac{\frac{1}{3}V}{\pi r^2} = h$

d. $F = \frac{9}{5}C + 32$ find c.

$\frac{9}{5}F = c + 32$

$\frac{9}{5}F - 32 = c$

e. $S = 2\pi r^2 + 2\pi r l$ find l

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