(1) $5x + 15 = 45$

$-15 \quad -15$

$5x = 30$

$x = 6$

(2) $6w - 2w = 24$

$4w = 24$

$w = 6$

3

$$-x + (-8) = 20$$

$$+8 \qquad +8$$

$$-x = +28$$

$$x = -28$$

(4)

$$6 = 12 + 3(m + 3)$$

$$6 = 12 + 3m + 9$$

$$6 = 3m + 21$$

$$-21 \qquad -21$$

$$-15 = 3m$$

$$-5 = m$$

(8)

(5)

$2(x+4)+8x-7 = 10x-2(2x-5)$

$2x+8+8x-7 = 10x-4x+5$

(10)

$10x+1 = 6x+5$

$-6x \quad -6x$

$4x+1 = 5$

$-1 \quad -1$

$4x = 4$

$x = 1$

1. $6x - 4 - 2x + 10 = 8 - x + 7 + 3x$

(10)

$$4x + 6 = 2x + 15$$
$$-2x \qquad -2x$$

$$2x + 6 = 15$$
$$-6 \quad -6$$

$$2x = 9$$

$$x = 4.5$$

9) $-5(x-3)+11 = 3-4(2x+3)$

$-5x+15+11 = 3-8x-12$

$-5x+26 = -8x-9$

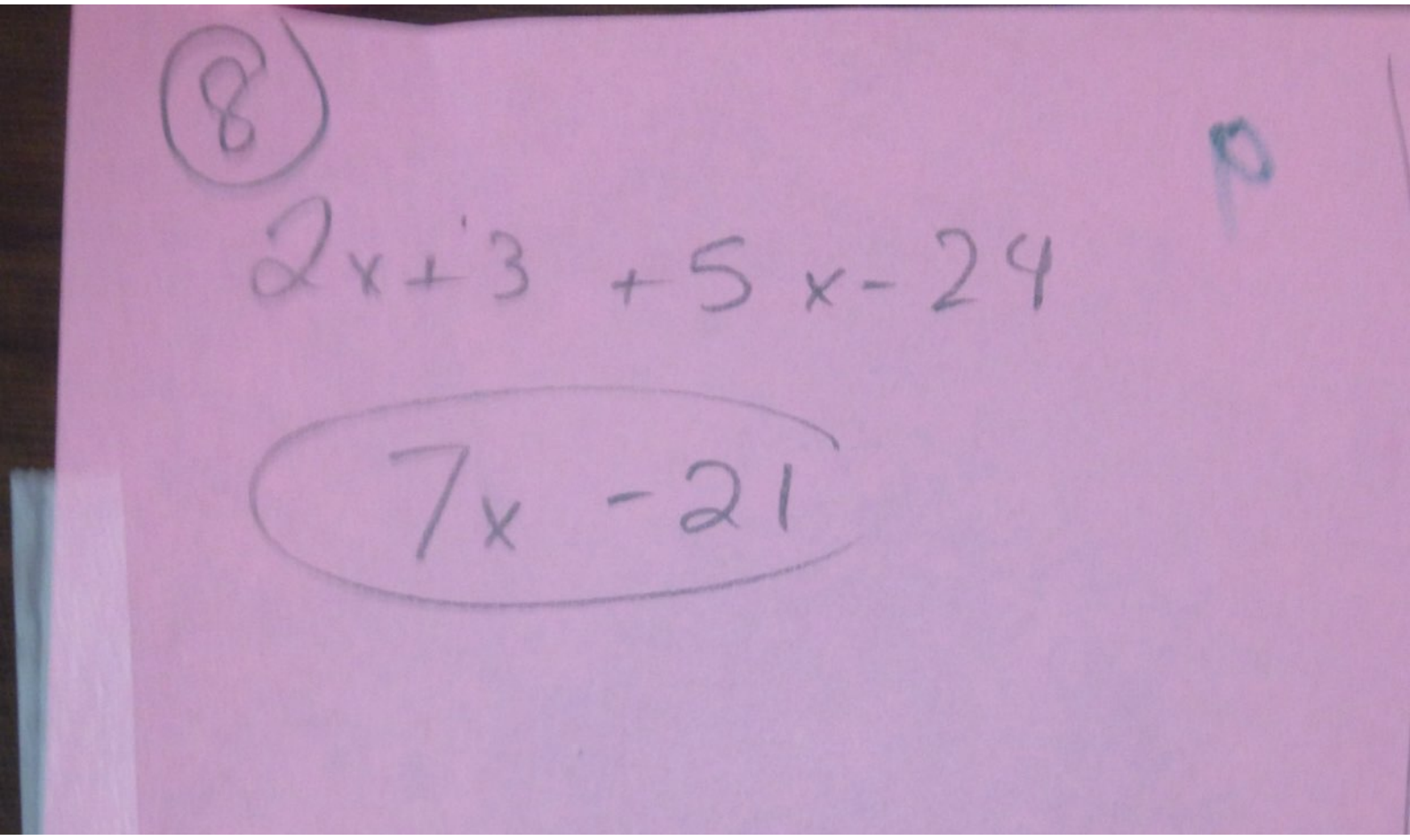
$+8x \qquad +8x$

$3x+26 = -9$

$-26 \quad -26$

$3x = -35$

$x = -11.\overline{6}$



9

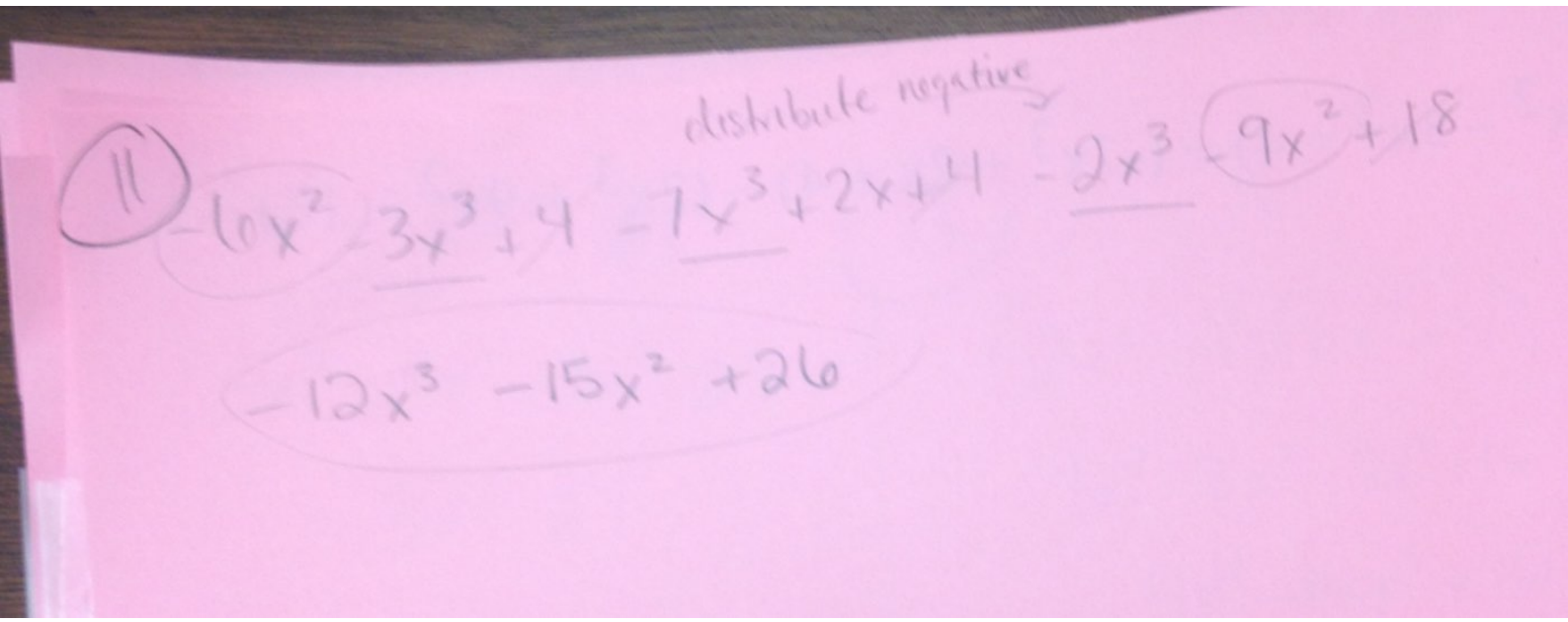
$(-5+8x)-(12x-7)$

$-5+8x-12x+7$

$-4x+2$

(10) $6x^2 + 17x + 8$ $-3x^2 - 5 + 10x$

$3x^2 - 7x + 3$



12 $(3x^2+9)(x^2-3)$

$3x^4 - 9x^2 + 9x^2 - 27$

$3x^4 - 27$

13

13 $(2x^2-4)^2$

$(2x^2-4)(2x^2-4)$

$4x^4-8x^2-8x^2+16$

$4x^4-16x^2+16$

14) $y = k \times z$

$100 = k(8)(3)$

$4.2 = k$

$y = 4.2 \times z$

$y = 4.2(5)(10)$

$y = 208.3$

(15) $y = \frac{k}{x^2}$ ← square of x

$4 = \frac{k}{8^2}$

$4 = \frac{k}{64}$

$256 = k$

$y = \frac{256}{x^2} = \frac{256}{3^2} = 28.\overline{4}$

16) $y = kx$

$5 = k(15)$

$\frac{1}{3} = \frac{5}{15} = k$

$y = \frac{1}{3}x$ OR $y = \frac{x}{3}$

$4 = \frac{1}{3}x$ $\quad 4 = \frac{x}{3}$

$12 = x$

(17) $y = \frac{k}{x}$

$12 = \frac{k}{10}$

$120 = k$

$y = \frac{120}{20}$

$y = 6$

18

$$V = \frac{k}{P}$$

$$80 = \frac{k}{2000}$$

$$160{,}000 = k$$

$$V = \frac{160000}{P}$$

$$V = \frac{160{,}000}{320}$$

$V = 500$ cubic cm