

Flashback #5

1. 10, 7, 4, ...

$$\begin{array}{c|c} x & y \\ \hline 1 & 10 \\ 2 & 7 \\ 3 & 4 \end{array} \quad \# -3 \rightarrow \boxed{-3x + 13 = y}$$

2. Start with 12 bacteria

- 1 12
- 2 (12 · 2)
- 3 (12 · 2) · 2 → 48 bacteria
- 4 (12 · 2 · 2) · 2
- 20 (12 · 2¹⁹)

2 days = 48 hrs → 12 · 2⁴⁷

Huge numbers!
So use exponents!

3.

| # people | Cost |
|----------|---------------|
| 1 | 150 + 5 = 155 |
| 2 | 160 |
| 3 | 165 |
| 4 | 170 |
| 5 | 175 |
| 6 | 180 |
| 7 | 185 |
| 8 | 190 |
| 9 | 195 |
| 10 | 200 |

b) $5x + 150 = y$

c) 40 people
 $5(40) + 150$
 $200 + 150$
 \$ 350

4.

$$\frac{(3^3 - 5) \cdot 3 \div -11 + 4}{42 - (3^2 \cdot 6)^0} \rightarrow \frac{(27 - 5) \cdot 3 \div -11 + 4}{16 - (9 \cdot 6)^0} \rightarrow$$

B
E
DM
AS

$$\frac{22 \cdot 3 \div -11 + 4}{16 \cdot 54^0} \rightarrow \frac{66 \div -11 + 4}{16 \cdot 1} \rightarrow \frac{-6 + 4}{16} \rightarrow \frac{-2}{16} \rightarrow -\frac{1}{8}$$

$$5 \quad \frac{12x^2 - 8xy}{4x} \rightarrow \frac{12x^2}{4x} - \frac{8xy}{4x} \rightarrow 3x - 2y$$

$$6 \quad \frac{1}{x} = \frac{5.9}{76.7} \rightarrow \text{reciprocate} \quad \frac{x}{1} = \frac{76.7}{5.9}$$

$$x = 13$$

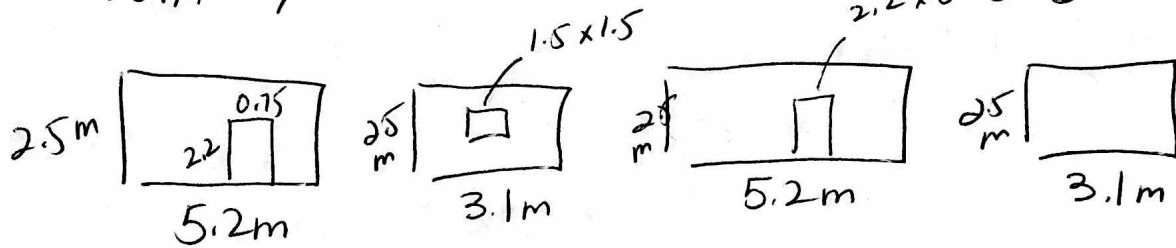
↓
Butterfly

$$5.9x = 76.7$$

$$\frac{5.9x}{5.9} = \frac{76.7}{5.9}$$

$$x = 13$$

7. room \rightarrow assume 4 walls \rightarrow rectangular $\xrightarrow{2.2 \times 0.75}$



a) assume wallpaper only on walls! (not floor or ceiling)

$$SA = 2(2.5 \cdot 5.2) + 2(2.5 \cdot 3.1) - (1.5)(1.5) - 2(2.2 \cdot 0.75)$$

$$2(13) + 2(7.75) - 2.25 - 3.3$$

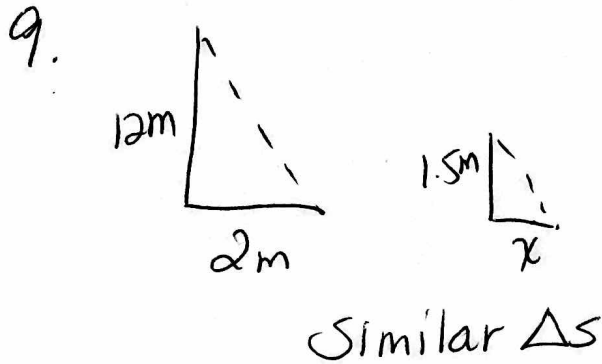
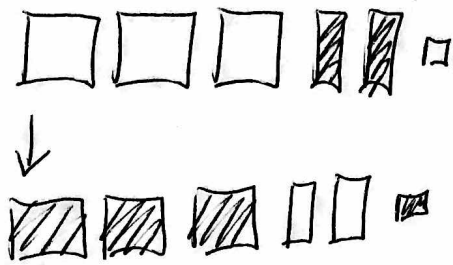
$$26 + 15.5 - 2.25 - 3.3$$

$$SA = 35.95 \text{ m}^2$$

b) 1 roll = 5.2 m^2

$$\frac{35.95}{5.2} = 6.9 \dots \therefore \text{purchase 7 rolls}$$

8. $-3x^2 + 2x - 1$
 opposite
 $3x^2 - 2x + 1$



$$\frac{1.5}{12} = \frac{x}{2}$$

$$\frac{3}{12} = \frac{12x}{12}$$

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

$$0.25m = x \text{ (Shadow)}$$

10. $12x - 0.7 = 5x + 3.2$

$$10 \left(12x - \frac{7}{10} = 5x + \frac{32}{10} \right)$$

$$\begin{array}{r} 120x - 7 = 50x + 32 \\ -50x \qquad -50x \end{array}$$

$$\begin{array}{r} 70x - 7 = 32 \\ +7 \qquad +7 \end{array}$$

$$70x = 39$$

$$x = \frac{39}{70}$$

Verify

$$\begin{array}{r} 12 \left(\frac{39}{70} \right) - \frac{7}{10} \times 7 \quad \left| \quad 5 \left(\frac{39}{70} \right) + \frac{32}{10} \right. \\ \hline \frac{468}{70} - \frac{49}{70} \quad \left| \quad \frac{195}{70} + \frac{224}{70} \right. \\ \hline \frac{419}{70} \quad \left| \quad \frac{419}{70} \right. \\ \hline \checkmark \end{array}$$