

$$1. \frac{\text{Total}}{\text{goal}} = \frac{1253\%}{100\%}$$

$$\frac{\$313,490}{g} = \frac{1253}{100}$$

$$1253g = \$313,490 \cdot 100$$

$$\frac{1253g}{1253} = \frac{\$313,490 \cdot 100}{1253} = \frac{31,349,000}{1253}$$

$$g \approx \$25,019.154\dots$$

4<5
stay

$$g \approx \$25,019.15$$

2. Absolute = new - old

$$4300 - 3250 = 1050 \text{ people}$$

$$\text{Relative} = \frac{\text{new} - \text{old}}{\text{old}} = \frac{(4300) - (3250)}{(3250)} = \frac{1050}{3250}$$

$$\approx 0,32307$$

7 > 5
so up!

Percent increase: $0,32307 \times 100$

→ 32,31 % increase.

old - new

3. Absolute: 147 million - 114 million = 33 million

Relative: $\frac{33 \text{ million}}{147 \text{ million}} \approx 0,2245$

$$\approx 22,5\%$$

Absolute = |new - old|

4. $\frac{100 \cancel{\text{km}}}{1 \cancel{\text{hr}}} = \frac{1 \cancel{\text{hr}}}{60 \cancel{\text{min}}} \cdot \frac{1 \cancel{\text{min}}}{60 \cancel{\text{s}}} \cdot \frac{1000 \text{ m}}{1 \cancel{\text{km}}} \cdot \frac{2 \text{ s}}{1} = \frac{100 \cdot 1000 \cdot 2}{60 \cdot 60} \text{ m}$

Need meters in 2 seconds = $\frac{200000}{3600} \text{ m}$

$$= 55,5 \text{ m} \approx 56 \text{ m}$$

$$5. \frac{10 \text{ lbs}}{1 \text{ ft}} = \frac{x}{4 \text{ in}}$$

$$\frac{10 \text{ lb}}{12 \text{ in}} = \frac{x}{4 \text{ in}}$$

$$12x = 4 \cdot 10$$

$$12x = 40$$

$$x = \frac{40}{12}$$

$$x = 3\frac{1}{3} \text{ lbs}$$

$$x = 3\frac{1}{3} (16 \text{ oz})$$

$$x = \frac{3 \cdot 3 + 1}{3} \cdot 16 \text{ oz}$$

$$x = \frac{10}{3} \cdot 16 \text{ oz}$$

$$x = \frac{160}{3} \text{ oz}$$

$$x = 53\bar{3} \text{ oz}$$

$$x \approx 53.3 \text{ oz}$$

$$\frac{10 \text{ lb}}{1 \text{ ft}} \cdot \frac{1 \text{ ft}}{12 \text{ in}} \cdot \frac{16 \text{ oz}}{1 \text{ lb}} \cdot 4 \text{ in} =$$

$$= \frac{10 \cdot 16 \cdot 4}{12} \text{ oz}$$

$$= \frac{640}{12} \text{ oz}$$

$$\approx 53.\bar{3} \text{ oz}$$

$$\approx 53.3 \text{ oz}$$

6. 2" thick layer
30' x 20' garden

how many cubic yards?
↑
volume

$$V = L \cdot w \cdot h$$

$$= (30 \text{ ft})(20 \text{ ft})(2 \text{ in})$$

$$= (30 \text{ ft})(20 \text{ ft})\left(\frac{1}{6} \text{ ft}\right)$$

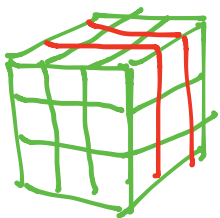
$$= \frac{600}{6} \text{ ft}^3$$

$$= 100 \text{ ft}^3$$

$$= 100 \text{ ft}^3 \cdot \frac{1 \text{ yd}^3}{27 \text{ ft}^3} = \frac{100}{27} \text{ yd}^3$$

$$1 \text{ yd}^3 = 27 \text{ ft}^3$$

$$\approx 3.7 \dots \text{ yd}^3$$



only sell by cubic yards → 4 cubic yards

7. tax rate: 9.3% = 0.093

price \$ 140

$$(0.093)(140) = \$13.02$$

8. growth rate: $190\% = 1.9$

$t = 2005 - 1983 = 22$

$$A = P(1+r)^t$$

$P = 1700$

$$A = 1700(1+1.9)^{22}$$

$r = 1.9$

$$A = 1700(2.9)^{22}$$

$$A = 2.5 \times 10^{13} \text{ people}$$

9. $P = 3000$

$r = .03$

$t = 5$

$n = 4$ (quarterly)

$A = ?$

compound interest

$$A = P \left(1 + \frac{r}{n}\right)^{nt}$$
$$= (3000) \left(1 + \frac{.03}{4}\right)^{4 \cdot 5}$$

$$= 3000 \left(\frac{4 + .03}{4}\right)^{20}$$

$$= 3000 \left(\frac{4.03}{4}\right)^{20}$$

$$\approx 3483,552$$

$$\approx \$3483.55$$

Interest: $A - P$

$$= \$3483.55 - \$3000 \approx$$

$$\boxed{\$483.55}$$

$$10. A = ?$$

$$P = 10000$$

$$r = 4\% = 0.04$$

$$t = 25$$

$$n = 12 \text{ (monthly)}$$

$$I = ?$$

$$a.) A = P \left(1 + \frac{r}{n}\right)^{nt}$$

$$A = 10000 \left(1 + \frac{0.04}{12}\right)^{1(12)(25)}$$

$$= 10000 \left(\frac{12}{12} + \frac{0.04}{12}\right)^{300}$$

$$= 10000 \left(\frac{12.04}{12}\right)^{300}$$

$$\approx \$27,137.651$$

$$\approx \$27,137.65$$

$$b.) I = A - P$$

$$= \$27,137.65 - \$10,000$$

$$= \$17,137.65$$

$$11. a.) P(F) = \frac{26}{65}$$

$$b.) P(\text{not } C) = \frac{A+B}{65} = \frac{18+22}{65} = \frac{40}{65}$$

$$= 1 - \frac{25}{65} = \frac{65-25}{65} = \frac{40}{65}$$

12. 25 students 14 F 11 M

$$a.) P(M \text{ then } F) = \frac{11}{25} \cdot \frac{14}{24} = \frac{154}{600}$$

$$b.) P(F \text{ then } M) = \frac{14}{25} \cdot \frac{11}{24} = \frac{154}{600}$$

$$c.) P(2M) = \frac{11}{25} \cdot \frac{10}{24} = \frac{110}{600}$$

$$d.) P(2F) = \frac{14}{25} \cdot \frac{13}{24} = \frac{182}{600}$$

13. $2 \cdot 3 \cdot 8 \cdot 2 = 96$ outfits

14. a.) repetition is allowed $\overset{4^3}{\underbrace{4 \cdot 4 \cdot 4}_{\text{words}}} = 64$ ^{3 spots} 4 letters

b.) repetition not allowed: $\underbrace{4 \cdot 3 \cdot 2}_{4P_3} = 24$ words