Review Worksheet 1

1. Simplify.

a) $3 - \frac{2}{3} \times \frac{9}{4} \times \frac{25}{15} =$ $3 - \frac{5}{2} = \boxed{\frac{1}{2}}$

b) $\left(3 - \frac{4}{5}\right) \div \left(\frac{1}{2} + \frac{4}{3}\right) =$ $\frac{11}{5} \div \frac{11}{6} = \frac{11}{5} \cdot \frac{6}{11} = \boxed{\frac{6}{5}}$

c) $-4 - 3(2 - 4)(-1)(-3) \div (-2) =$ $\boxed{-13}$

$-4 - 3(-2)(-1)(-3) \div (-2)$

$-4 - 9$

2. Solve the following equations:

a) $\dfrac{2x}{2} = \dfrac{-4}{2}$

$\boxed{x = -2}$

b) $\frac{-1}{3}b - 6 = -8 \; \overset{+6}{\underset{+6}{}}$

$(-3) -\frac{1}{3}b = -2 (-3)$

$\boxed{b = 6}$

c) $-3x + 8 = 20 \; \overset{-8}{\underset{-8}{}}$

$-3x = 12$

$\boxed{x = -4}$

d) $-\frac{2}{3}x = 8 \cdot \dfrac{-3}{2}$

$\boxed{x = -12}$

e) $3(1 - 2a) = -6$

$3 - 6a = -6 - 3$

$\dfrac{-6a}{-6} = \dfrac{-9}{-6}$
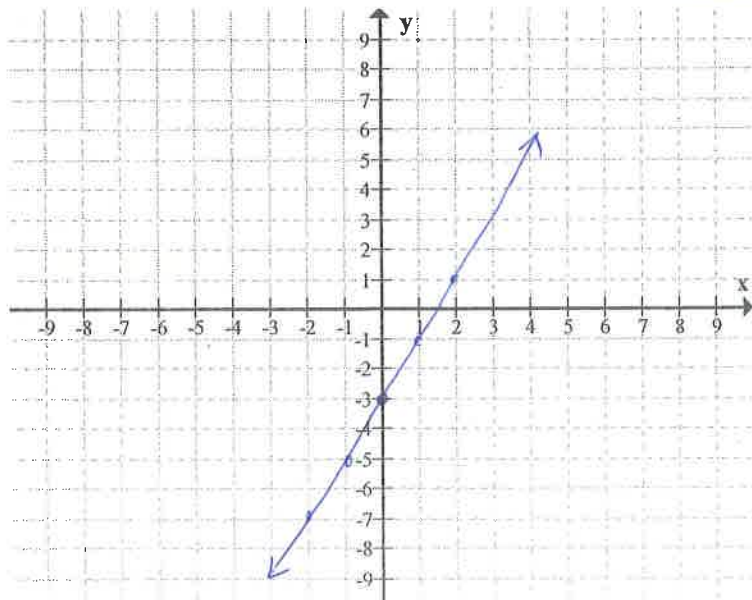
$a = \dfrac{-9}{-6} = \boxed{\dfrac{3}{2}}$

f) $\frac{1}{2} - 3y = 5$

$-3y = 5 - \frac{1}{2}$
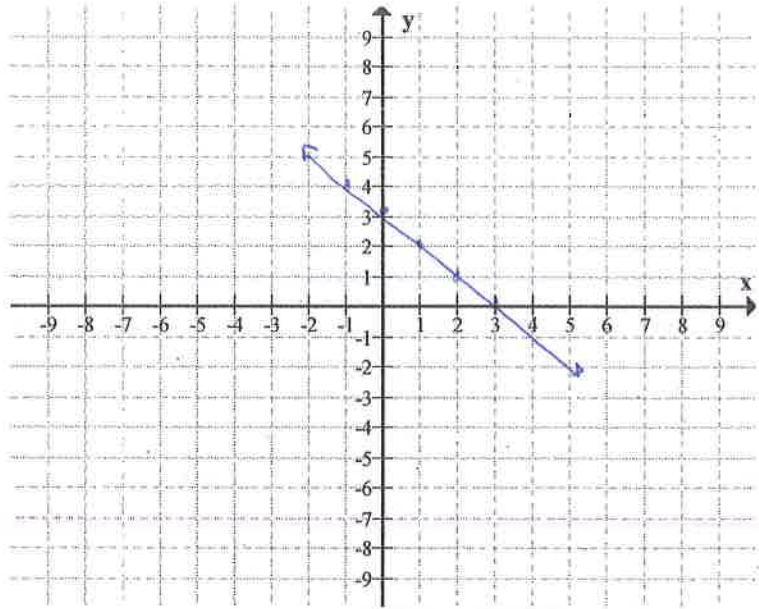
$-3y = \dfrac{9}{2}$

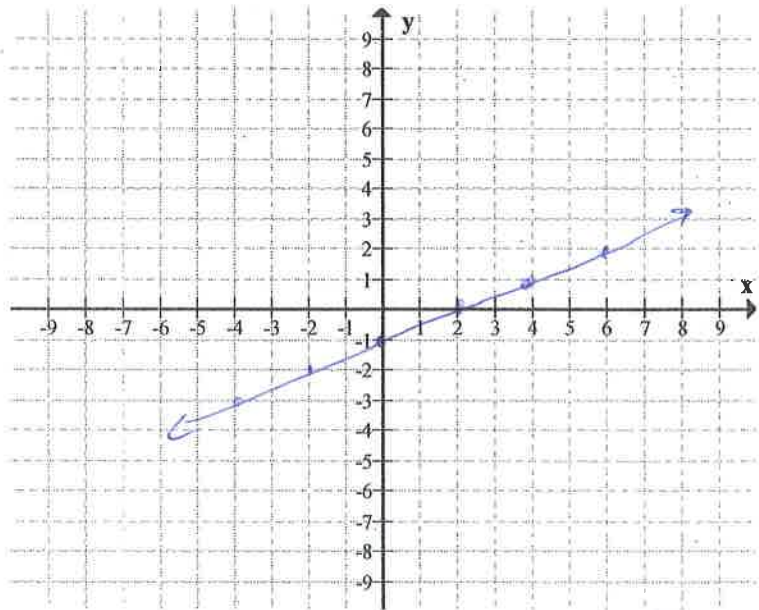$y = \boxed{-\dfrac{3}{2}}$

3. Graph.

a) $y = 2x - 3$

x	y
-2	$2(-2) - 3 = -7$
-1	$2(-1) - 3 = -5$
0	$2 \cdot 0 - 3 = -3$
1	$2 \cdot 1 - 3 = -1$
2	$2 \cdot 2 - 3 = 1$

b) $y = -x + 3$

c) $y = \frac{1}{2}x - 1$

5. Write as a fraction and a decimal.

a) 8% $\frac{8}{100} = \boxed{\frac{2}{25}}$

$\boxed{0.08}$

b) $\frac{2}{5}$% $\frac{2}{5} \cdot \frac{1}{100} \boxed{\frac{1}{250}}$

$\frac{50}$

0.4%

$\boxed{0.004}$

c) 1.25% $\frac{1.25}{100} = \boxed{0.0125}$

$\frac{125}{10000} = \boxed{\frac{1}{80}}$

6. Write as a percentage.

a) 0.035   3.5%

b) $3\frac{4}{5} = 3.8 = 380\%$

d) 2.125 $= 212.5\%$

7. Translate into an equation or a proportion and solve.

a) 40 is what percent of 16?

$$\frac{x}{100} = \frac{40}{16}$$

$$x = \frac{40 \cdot 100}{16} = \boxed{250} \checkmark$$

b) What percent of 200 is 250?

$$\frac{x}{100} = \frac{250}{200}$$

$$x = \boxed{125\%}$$

c) 35% of what number is 120?

$$\frac{35}{100} = \frac{120}{x}$$

$$\boxed{x = 342.86}$$

8. A population of rabbits grows at a rate of 3% per year. If there are 10000 rabbits now, how many rabbits will there be in 2 years?

$$10\,000 \times 1.03 = 10\,300$$
$$10\,300 \times 1.03 = \boxed{10\,609}\ \text{rabbits}$$

8. Pat's Salary **before** two 10% raises was 50,000. What is Pat's salary **after** the two raises?

$$50\,000 \times 1.10 \times 1.10 = \$60\,500$$

9. Tom's salary **after** two raises of 10% was 48 400. What was his salary **before** the raises?

$~~~~~~~~~~$ ~~$48\,400$~~

$$x \cdot 1.10 \cdot 1.10 = 48\,400$$

$$x \cdot 1.21 = 48\,400$$

$$\boxed{x = 40\,000}$$

$$\$40\,000$$

Review Worksheet 2

1. A cube has a volume of 125cm³. Find its surface area.

$L^3 = 125$

$L = 5$

$SA = 6L^2$

$= 6 \cdot 5^2$

$= 6 \cdot 25 = \boxed{150 \, cm^2}$

2. A cube has a surface area of 726cm². Find its volume.

$6L^2 = 726 \qquad L = 11 \qquad V = L^3$

$L^2 = 121 \qquad\qquad\qquad\qquad = 11^3 \qquad V = \boxed{1331 \, cm^3}$

3. The sum of then edges in a cube is 48cm. Find its surface area and volume.

$12L = 48$

$L = 4 \, cm$

$SA = 6L^2 \qquad\qquad V = L^3$

$SA = 6 \cdot 4^2 \qquad\qquad V = 4^3$

$SA = 6 \cdot 16 \qquad\qquad V = \boxed{64 \, cm^3}$

$SA = \boxed{96 \, cm^2}$

4. The base area of a prism is 18cm. its volume is 360cm³. Find its height.

$V = B \cdot H$

$360 = 18 \cdot H$

$H = 360 \div 18$

$\boxed{H = 20 \, cm}$

5. A square based prism has a height of 10cm and a volume of 160cm³. Find its surface area.

$V = BH$

$160 = B \cdot 10$

$B = \dfrac{160}{10}$

$\boxed{B = 16 \, cm^2}$

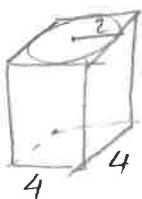$10 \quad SA = 16 + 16 + (40)4$

$= 32 + 160$

$SA = \boxed{192} \, cm^2$

6. A cube has a side of 6. A prism has dimensions of 2 by 3 by 5. Which one has a bigger volume? Which one has a bigger surface area?

$\checkmark V_{cube} = L^3$

$= 6^3$

$= 216 \, cm^3$

$V_{prism} = LWH$

$= 2 \cdot 3 \cdot 5$

$= 30 cm^3$

7. Find the surface area and the volume of a cylinder inscribed in a square base prism with base are 16 square cm and height 10 cm.

$L = \sqrt{16}$

$L = 4$

$R = 2$

$H = 10$

$SA = 2\pi R^2 + 2\pi RH$

$= 2\pi \cdot 2^2 + 2\pi \cdot 2 \cdot 10$

$= 8\pi + 40\pi$

$= 48\pi \, cm^2$

$V = \pi R^2 H$

$= \pi \cdot 2^2 \cdot 10$

$= 40\pi \, cm^3$