

Post Lent Term Test Sheet 2

- $T = -\frac{2}{5}P + 12$
 - Find a formula for P in terms of T . $P = 30 - \frac{5}{2}T$
 - If $T = 18$, find P . $P = -15$
 - If $T = P$, find the value of P . $P = \frac{60}{7}$
- $K = \frac{3}{5}L + 30$
 - Find a formula for L in terms of K . $L = \frac{5}{3}K - 50$
 - If $K = 3$, find L . $L = -45$
 - If $K = L$, find the value of L . $L = 75$
- Solve the following:
 - $19x^2 = -17x$. $x = 0$ or $x = -\frac{17}{19}$
 - $(4x + 3)(x - 2) = 0$. $x = -\frac{3}{4}$ or $x = 2$
 - $25y^2 - 49 = 0$. $y = -\frac{7}{5}$ or $y = \frac{7}{5}$
- Triangle ABC is similar to triangle XYZ (respectively). $XY = 2d + 1$. $YZ = 4$. $AB = 3d + 2$. $BC = 7$. Find the value of d . $d = \frac{1}{2}$
- Triangle PQR . $PQ = PR = 9$. $QR = 4$. Find angle $P\hat{Q}R$. $P\hat{Q}R = 77.160\dots$
- Find the equation of the line through $(-3, -2)$ and $(-1, 6)$. $y = 4x + 10$
 - The line $4x + 3y = 240$ crosses the x -axis at A and the y -axis at B . Find A and B . $A(60, 0), B(0, 80)$
 - Find (to 3sf) the length between $(-2, 5)$ and $(1, -1)$. 6.71
- Find (in the form $ax + by + c = 0$) the line with gradient $-\frac{1}{4}$ that passes through $(-2, 5)$. $x + 4y - 18 = 0$
 - Find where the line $y = \frac{5}{2}x + \frac{1}{2}$ intersects the line $x + 4y = 8$. $(\frac{6}{11}, \frac{41}{22})$
- The mass of Mr Stone has decreased 6% over the last year. If he now has a mass of 110kg, find (to 2 dp) his mass at the start of the year. 117.02kg
 - Candy is a lawyer. She was paid a salary and a 16% bonus this year. If she was paid £220,000 how much was her bonus (to the nearest pound)? $\text{£}30,345$
- Rebecca Black has two geometrically similar trinket box's. The smaller one has a volume of 40cm^3 . The larger one has a volume of 53.24cm^3 . Find the height of the smaller one if the larger one is 11cm long. 10cm
- Justin Bieber has two geometrically similar maths textbooks. The smaller one has a surface area of 120cm^2 . The larger one has a SA of 202.8cm^2 . Find the volume of the bigger one if the smaller one has volume 260cm^3 . 571.22cm^3
- 100 people are surveyed as to whether they like maths or physics. 90 like maths. 80 like physics 5 like neither.

(a) Draw a Venn diagram of the situation.

(b) Find how many people like both maths and physics.

$$\boxed{75}$$

12. The *total* surface area of a cone is 40π (including the circular base). If the slant height is 3cm, find r .

$$\boxed{r = 5}$$

13. The *total* surface area of a cone is 3π (including the circular base). If the slant height is 0.5cm, find r .

$$\boxed{r = \frac{3}{2}}$$