

Q1: the length , L cm of a simple pendulum is directly proportional to the square of its time , T sec . A pendulum with a length of 400 cm has a period of 4s

1. Find an equation connecting L and T
2. Find the length of pendulum which has a period of 5s
3. Draw the graph of l and T

Q2: given that y is inversly proportional to X^3 . copy and complete the table

X	9			3	
Y		5	300	90	69

Q3: if z^2 is directly proportional to x^3 and $z=8$ when $x=4$, find the values of $z=$ when $x=9$

Q5: simplify the following

- a) $\frac{8ab^3(2a+3b)^2}{32a^2b(3b+2a)}$
- b) $2x^2+x-15/ax+3a-2bx-6b$
- c) $a^2-ab-ac+bc/a^2+ab-ac-bc$

Q6: make the letter subject of the formula

1. $c/d=e+h$ (c)

2. $(H-K)^{1/3}=m$ (H)

Q7: express the following as a fraction in its simplest form

1). $C-1/3c-7-1/14-6c$

2) $h+k/p-q + 3h+k/8q-8p$

Q8: simplify the following

1. $(a^{-2}b^3)^{1/3} \times (a^4b^{-5})^{1/2}$

2. $(\frac{g^2}{h^3})^6 / (\frac{-3g^3}{2h^2})^3$

3. $9^c=243$

Q9: factorize the following expressions

a. $35m^2n + 5mn - 30n$

b. $-3b^2 + 76b - 25$

Q10: simplify the following

- a. $\sqrt{1700}/\sqrt{20}$
- b. $(\sqrt{6} - 3\sqrt{2})(\sqrt{6} + 3\sqrt{2})$
- c. $\frac{\sqrt{3}+2\sqrt{2}}{\sqrt{3}-2\sqrt{2}}$
- d. $\sqrt{6} \times \sqrt{8}$
- e. $2\sqrt{8} + 5\sqrt{3} - 3\sqrt{3}$
- f. $\frac{3\sqrt{5}-2\sqrt{3}}{3\sqrt{3}-\sqrt{3}}$
- g. $\frac{9}{2\sqrt{3}-3}$

Q11: solve the following equation and find the completing squares

- a. $(7 - 3x)(x + 2) = 0$
- b. $x(x - 3) = 5x + 1$
- c. $(x + 2)(x - 5) = 4x$

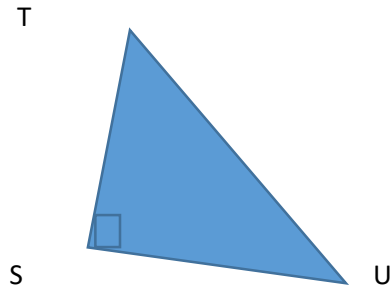
Q12: express each of the following in the form of $(a + b)^2 + b$

- a. $x^2 + 3x - 2$
- b. $x^2 + \frac{1}{2}x$

Q13: solve each of the following equations, giving your answer correct to 2 decimal places a.

- a. $x^2 - 12x + 9 = 0$
- b. $x^2 + \frac{1}{4}x - 3 = 0$
- c. $x^2 - 5x - 5 = 0$

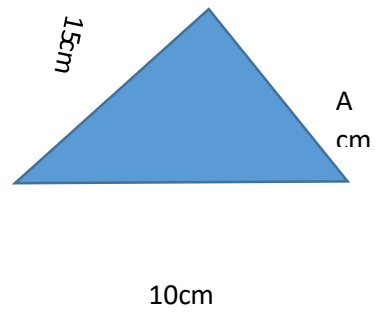
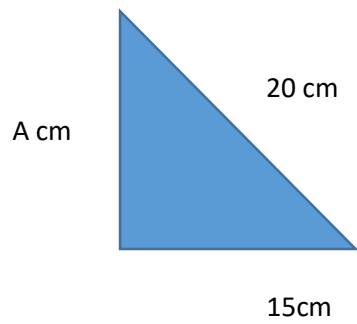
Q14: in $\triangle STU$, $ST=3$ cm, $TU=4.24$ cm and $SU=3$ cm, is $\triangle STU$ a right-angled triangle?



Prove it by using

theorem

Q1 find the value of the following in each of the following right triangle



Q2 find the value of each of the following fig

