

Name: _____	Subject: Mathematics	Class: 10 <sup>th</sup>	Time: 80 minutes	Total Marks: <b>30</b>
<b>Chapter No.03</b>	<b>MJDexpert.com</b>			Obtained marks

**Note:** Please attempt any 10 short questions from Question 2. Also, attempt both parts of Question 3. Cutting and removal of any content is strictly prohibited.

**Q.No.1 Choose the correct Answer.** (6 × 1 = 6)

1. If $a : b :: c : d$ then property of alternando is:			
a) $\frac{b}{a} = \frac{d}{c}$	b) $\frac{a}{c} = \frac{b}{d}$	c) $\frac{a+b}{b} = \frac{c+d}{d}$	d) $\frac{a}{a-b} = \frac{c}{c-d}$
2. If $\frac{u}{v} = \frac{v}{w} = k$ then.			
a) $u = wk^2$	b) $u = vk^2$	c) $u = w^2k$	d) $u = v^2k$
3. Which method used to prove the proportion equations:			
a) K-method	b) J-method	c) Coding method	d) None of these
4. A line which has only one point common with circle is called:			
a) Sine of circle	b) Cosine of circle	c) Tangent of circle	d) Sine of circle
5. In proportion $4 : x :: 5 : 15$ , $x$ is equal to:			
a) $\frac{8}{15}$	b) $\frac{15}{8}$	c) 100	d) 120
6. If $\frac{u}{v} = \frac{v}{w} = k$ , then:			
a) $u = wk^2$	b) $u = vk^2$	c) $u = kw^2$	d) $u = kv^2$

**Q.No.2: Give the Short Answers.** (8 × 2 = 16)

<b>i.</b> If $R \propto T^2$ , $R=8$ , $T=3$ . Find $R$ when $T=6$
<b>ii.</b> Find $P$ if 12, $p$ and 3 are in continued proportion
<b>iii.</b> Define inverse variation.
<b>iv.</b> If $a : b = c : d$ then prove that $\frac{3a+2b}{3a-2b} = \frac{3c+2d}{3c-2d}$
<b>v.</b> Find the mean proportional to 16 and 49.
<b>vi.</b> Define joint variation.
<b>vii.</b> If $z \propto xy$ and $z = 36$ when $x = 2$ , $y = 3$ then find $z$ .
<b>viii.</b> Find the cost of 8kg mangoes, if 5kg mangoes cost Rs, 250.

**Q.No.3: Give the long answers.** (4 + 4 = 08)

a) Solve it $\frac{\sqrt{x^2+8p^2}-\sqrt{x^2-p^2}}{\sqrt{x^2+8p^2}+\sqrt{x^2-p^2}} = \frac{1}{3}$
b) If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f} = k$ , then prove that $\frac{ac+ce+ef}{bd+df+fb} = \left(\frac{ace}{bdf}\right)^{2/3}$

**"Simplicity is the ultimate sophistication"**