6. Calculate the *free sag* dimension.
   To do this, subtract the *loaded without rider* dimension (step 5) from *the unloaded* dimension (step 2).
   Free sag indicates the distance your rear suspension should sag from the weight of the sprung portion of your CRF.
   With the spring pre-load set to obtain the proper race sag, the rear suspension should sag: **10 to 25 mm (0.39 to 0.98 in)**
   If the rear of your CRF sags less than 10 mm (0.39 in) from its own weight, the spring is too stiff for your weight. It is not compressed enough, even though you have the proper race sag adjustment. As a result, the rear suspension will not extend as far as it should.

Spring Rates
If you are lighter or heavier than the average rider and cannot set the proper ride height without altering the correct spring pre-load, consider an aftermarket shock absorber spring.

A spring that is too soft for your weight forces you to add excessive spring pre-load to get the right race sag and, as a result, the rear end of the motorcycle is raised. This can cause the rear wheel to unload too much in the air and top out as travel rebounds. The rear end may top out from light braking, or kick sideways over lips and square-edged terrain. It may even top-out when you dismount your CRF.

Because of the great absorption quality of the shock bumper rubber, it may be difficult for you to notice when your CRF's suspension is bottoming. Some riders may think the damping or perhaps the leverage ratio is too harsh. In reality, the problem is most likely insufficient spring pre-load or a spring that is too soft. Either situation prevents utilizing the full travel.

Keep in mind that a properly adjusted suspension system may bottom slightly every few minutes at full speed. Adjusting the suspension to avoid this occasional bottoming may cost more in overall suspension performance than it is worth.

A spring that is too stiff for your weight will not allow the rear tyre to hook up under acceleration and will pass more bumps on to you.