

1. The amount a spring will stretch,  $S$ , varies directly as the force (or weight)  $F$  attached to the spring. If a spring stretches 8.8 inches when 80 pounds are attached, write a direct variation equation for  $S$  in terms of  $F$  and find the amount the spring stretches when 70 pounds are attached?
2. The amount a spring will stretch,  $S$ , varies directly as the force (or weight)  $F$  attached to the spring. If a spring stretches 10.4 inches when 20 pounds are attached, write a direct variation equation for  $S$  in terms of  $F$  and find the amount the spring stretches when 80 pounds are attached?
3. The amount a spring will stretch,  $S$ , varies directly as the force (or weight)  $F$  attached to the spring. If a spring stretches 5.2 inches when 80 pounds are attached, write a direct variation equation for  $S$  in terms of  $F$  and find the amount the spring stretches when 40 pounds are attached?
4. The amount a spring will stretch,  $S$ , varies directly as the force (or weight)  $F$  attached to the spring. If a spring stretches 6 inches when 60 pounds are attached, write a direct variation equation for  $S$  in terms of  $F$  and find the amount the spring stretches when 30 pounds are attached?
5. The amount a spring will stretch,  $S$ , varies directly as the force (or weight)  $F$  attached to the spring. If a spring stretches 4.4 inches when 90 pounds are attached, write a direct variation equation for  $S$  in terms of  $F$  and find the amount the spring stretches when 50 pounds are attached?
6. The data below show direct variation. Find the constant of variation and write an equation of direct variation.

Time (hours)	2	5	8	11
Distance (miles)	60	150	240	330

7. The data below show direct variation. Find the constant of variation and write an equation of direct variation.

Time (hours)	3	6	12	15
Temperature (degrees C)	4.5	9	18	22.5



16. If  $x = 30$  when  $y = 50$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 120$ .  
[A] 62                      [B] 77                      [C] 82                      [D] 72
17. If  $x = 120$  when  $y = 150$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 180$ .  
[A] 134                      [B] 144                      [C] 149                      [D] 154
18. If  $x = 14$  when  $y = 70$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 110$ .  
[A] 17                      [B] 22                      [C] 32                      [D] 12
19. If  $x = 24$  when  $y = 80$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 90$ .  
[A] 17                      [B] 32                      [C] 37                      [D] 27
20. If  $x = 133$  when  $y = 190$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 40$ .  
[A] 18                      [B] 33                      [C] 28                      [D] 38
21. If  $x = 136$  when  $y = 170$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 140$ .  
[A] 102                      [B] 122                      [C] 112                      [D] 107
22. If  $x = 36$  when  $y = 180$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 190$ .  
[A] 48                      [B] 38                      [C] 43                      [D] 28
23. If  $x = 81$  when  $y = 90$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 150$ .  
[A] 125                      [B] 130                      [C] 135                      [D] 145
24. If  $x = 84$  when  $y = 140$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 120$ .  
[A] 77                      [B] 82                      [C] 62                      [D] 72
25. If  $x = 24$  when  $y = 80$  and  $x$  varies directly as  $y$ , then find  $x$  when  $y = 160$ .  
[A] 43                      [B] 38                      [C] 48                      [D] 58