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| **Question 1**  a is directly proportional to b such that a = 2b.   1. Find a when b = 3 2. Find b when a = 7 | **Question 2**  c is directly proportional to d such that c = 1.5d.   1. Find c when d = 12 2. Find d when c = 15 |
| **Question 3**  T is directly proportional to V such that T = 8V   1. Find T when V = 7 2. Find V when T = 24 | **Question 4**  A is directly proportional to B.  When A = 28, B = 7.   1. Find an equation for A in terms of B 2. Find A when B = 12 3. Find B when A = 13 |
| **Question 5**  Y is directly proportional to X.  When Y = 108, X = 9.   1. Find an equation for Y in terms of B. 2. Find Y when X = 5 3. Find X when Y = 24 | **Question 6**  U is directly proportional to T.  When U = 36, T = 4   1. Find an equation for U in terms of T. 2. Find U when T = 7 3. Find T when U = 108 |
| **Question 7**  R is directly proportional to S.  When R = 9, S = 1.5.   1. Find an equation for R in terms of S. 2. Find R when S = 8 3. Find S when R = 15 | **Question 8**  The distance (d) a weighted ball falls in water in metres is directly proportional to the time (t) it takes to drop in seconds.  When the ball falls 20m, it takes 10 seconds.   1. Find an equation for d in terms of t. 2. Calculate how long it takes the ball to drop through 14 metres of water. |
| **Question 9**  The weight (w) in grams of a piece of wire is directly proportional to its length (l) in cm.  A piece of wire is 25cm long and has a weight of 5 grams.   1. Find an equation for W in terms of D. 2. Find the weight of a 30cm piece of wire. | **Question 10**  Time (T) taken for a water heater to boil water is directly proportional to the Power (P) in watts of the water heater.  When P = 1300, T = 650.  Find the value for T when P = 900. |

**Direct Proportion.**

***y = kx***

**Indirect (Inverse) Proportion.**

***y = k***

***x***

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| **Question 1**  Y is inversely proportional to x.  Complete the table of values below.    Make sure that your write the formula clearly. | |
| **Question 2**  A is inversely proportional to B.  When A = 4, B = 7   |  |  |  |  | | --- | --- | --- | --- | | B | 7 | 4 | ? | | A | 4 | ? | 56 |  1. Write an equation for A in terms of B. 2. Complete the table of values for A and B. | |
| **Question 3**  P is inversely proportional to m.  P = 48 when m = 9.   1. Form an equation for P in terms of m. 2. Calculate the value of P when m = 12. | **Question 4**  R is inversely proportional to T.  R = 12 when T = 0.2   1. Find an equation for R in terms of T. 2. Find the value of R when T = 4 |
| **Question 5**  F is inversely proportional to D.  When D = 50, F = 256.   1. Find an equation for F in terms of D. 2. Find the value of F when D = 80. | **Question 6**  Y is inversely proportional to x2  Given that y = 2.5 when x = 24.   1. Find an equation for y in terms of x. 2. Find the value of y when x = 20. |
| **Question 7**  The shutter speed, S, of a camera varies inversely to the **square** of the aperture settings, F.  When F = 8, S = 125   1. Find an equation for S in terms of F. 2. Find the value of S when F = 4. | |

**Direct Proportion – Answers.**

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| **Question 1**  a is directly proportional to b such that a = 2b.   1. a = 6 2. b = 3.5 | **Question 2**  c is directly proportional to d such that c = 1.5d.   1. c = 18 2. d = 10 |
| **Question 3**  T is directly proportional to V such that T = 8V   1. T = 56 2. V = 3 | **Question 4**  A is directly proportional to B.  When A = 28, B = 7.   1. A = 4B 2. A = 48 3. B = 13/4 = 3 ¼ |
| **Question 5**  Y is directly proportional to X.  When Y = 108, X = 9.   1. Y = 12X 2. Y = 60 3. X = 2 | **Question 6**  U is directly proportional to T.  When U = 36, T = 4   1. U = 9T 2. U = 63 3. T = 12 |
| **Question 7**  R is directly proportional to S.  When R = 9, S = 1.5.   1. R = 6S 2. R = 48 3. S = 15/6 = 1 3/6 = 1 ½ | **Question 8**  The distance (d) a weighted ball falls in water in metres is directly proportional to the time (t) it takes to drop in seconds.  When the ball falls 20m, it takes 10 seconds.   1. Find an equation for d in terms of t. d = 2t 2. 7 seconds. |
| **Question 9**  The weight (w) in grams of a piece of wire is directly proportional to its length (l) in cm.  A piece of wire is 25cm long and has a weight of 5 grams.   1. W = 0.2D 2. 6 grams. | **Question 10**  Time (T) taken for a water heater to boil water is directly proportional to the Power (P) in watts of the water heater.  When P = 1300, T = 650.  Find the value for T when P = 900.  Equation: T = 0.5P  When P = 900, T = 450 |

**Indirect (Inverse) Proportion - Answers**

***y = k***

***x***

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| **Question 1**  Y is inversely proportional to x.  Complete the table of values below.    **8/7**  **8**  Make sure that your write the formula clearly. Y = 40/X | |
| **Question 2**  A is inversely proportional to B.  When A = 4, B = 7   |  |  |  |  | | --- | --- | --- | --- | | B | 7 | 4 | 0.5 | | A | 4 | 7 | 56 |  1. Write an equation for A in terms of B.   **A = 28/B**   1. Complete the table of values for A and B. | |
| **Question 3**  P is inversely proportional to m.  P = 48 when m = 9.   1. Form an equation for P in terms of m.   P = 432/m   1. Calculate the value of P when m = 12. P = 36 | **Question 4**  R is inversely proportional to T.  R = 12 when T = 0.2   1. Find an equation for R in terms of T. R = 2.4/T 2. Find the value of R when T = 4   R = 0.6 |
| **Question 5**  F is inversely proportional to D.  When D = 50, F = 256.   1. Find an equation for F in terms of D.   F = 12800/D   1. Find the value of F when D = 80.   F = 160 | **Question 6**  Y is inversely proportional to x2  Given that y = 2.5 when x = 24.   1. Find an equation for y in terms of x.   Y = 576/x2   1. Find the value of y when x = 20.   Y = 2.88 |
| **Question 7**  The shutter speed, S, of a camera varies inversely to the **square** of the aperture settings, F.  When F = 8, S = 125   1. Find an equation for S in terms of F. 2. Find the value of S when F = 4. | |