Multiple choice questions - Direct and inverse proportion

Year: Year 9 · 10

Question 1 y is directly proportional to x. When x = 5, y = 20. What is y when x = 8?

- ◯ **A.** 25
- ◯ **B.** 32
- ◯ **C.** 28
- ◯ **D.** 160

Question 2 y is inversely proportional to x. When x = 2, y = 9. What is y when x = 6?

- ◯ **A.** 27
- ◯ **B.** 3
- ◯ **C.** 18
- ◯ **D.** 1.5

Question 3 Which equation shows inverse proportion?

- ◯ **A.** $y = 4x$
- ◯ **B.** $y = x + 4$
- ◯ **C.** $y = 4/x$
- ◯ **D.** $y = x^2$

Question 4 The graph of direct proportion is:

- ◯ **A.** a curve
- ◯ **B.** a straight line through the origin
- ◯ **C.** a straight line not through the origin
- ◯ **D.** a horizontal line

Question 5 4 taps fill a bath in 6 minutes. How long would 8 taps take?

- ◯ **A.** 12 min
- ◯ **B.** 3 min
- ◯ **C.** 2 min
- ◯ **D.** 24 min

Question 6 If $y \propto 1/x$ and x is doubled, y is:

- ◯ **A.** doubled
- ◯ **B.** halved
- ◯ **C.** unchanged

- ◯ **D.** increased by 2

Question 7 12 apples cost £3. What do 20 apples cost?

- ◯ **A.** £4
- ◯ **B.** £5
- ◯ **C.** £6
- ◯ **D.** £7.20

Question 8 Which table shows direct proportion?

- ◯ **A.** x:1,2,3 y:2,4,6
- ◯ **B.** x:1,2,3 y:6,3,2
- ◯ **C.** x:1,2,3 y:3,4,5
- ◯ **D.** x:1,2,3 y:5,4,3

Question 9 $y = k/x$, $k = 36$, $x = 9$. y is:

- ◯ **A.** 324
- ◯ **B.** 4
- ◯ **C.** 27
- ◯ **D.** 0.25

Question 10 A car takes 3 hours at 50 km/h. At 75 km/h the time is:

- ◯ **A.** 4.5 h
- ◯ **B.** 2 h
- ◯ **C.** 1.5 h
- ◯ **D.** 2.5 h

Answer grid - Direct and inverse proportion

Year: Year 9

Question	Answer	Explanation
1	**B**	k = 4, y = 4 × 8.
2	**B**	k = 18; 18 ÷ 6 = 3.
3	**C**	k/x form.
4	**B**	y = kx.
5	**B**	24 tap-minutes ÷ 8.
6	**B**	Inverse proportion.
7	**B**	25p each × 20.
8	**A**	y ÷ x is constant: 2.
9	**B**	36 ÷ 9.
10	**B**	150 ÷ 75.