**UNIT 5 – SLOPE AND RATES OF CHANGE - ANSWERS**

**ASSIGNMENT 1 – RATIOS AND PROPORTIONS**

1a) 3:8 3 to 8 b) 5/12 5:12 c) 18/11 18 to 11

2a) no b) yes c) yes

**ASSIGNMENT 2 – CROSS MULTIPLY AND DIVIDE**

1) 0.8 2)6.0 3) 150.0 4) 0.8

**ASSIGNMENT 3 – WORKING WITH RATIO**

1) 20:45 / 4:9 2) 30:10 / 3:1 3) 250:1000 / 1:4

**ASSIGNMENT 4 – WORKING WITH PROPORTION**

1) 36.4 minutes 2) 121 cm 3) 75 minutes

**ASSIGNMENT 5 – CALCULATING SLOPE**

1) FRACTION DECIMAL

15/67 0.22

2/25 0.08

18.5/5.2 3.56

2a) 0.2 b) 0.6 c) 1.5 d) 0.02 e) 0.25

**ASSIGNMENT 6 – FINDING RISE OR RUN**

1) 15.12 m 2) 281.25 m 3) 130 m 4) 9.7 m 5) 9 feet 6) 40 cm

**ASSIGNMENT 7 – SPECIAL SLOPES**

1) 36% 2) 5% 3) 12%, yes! 4) 2.79 m 5) 2.4 m

6) House 2 has a steeper roof with a slope of 0.375

**ASSIGNMENT 8 – ANGLE OF ELEVATION, TANGENT AND SLOPE**

28/48

30.68 30.68 670

5/8 0.625 tan-1 (0.625) = 320

100 49/100 0.488 260

2a) 5 ft b) 370 3) 590 4) 360

5a) 0.007 b) 8.6 cm c) 0.410

**ASSIGNMENT 9 – ORDERED PAIRS**

1) K (10,0) M (5,8) H (8,7) A (2,12) Q (7,7) E (0,10)

2) N (1, 1) R(1, 9) O (11, 6) G (12, 10) J (11, 1) F(10, 4)

**ASSIGNMENT 10 – SIMPLIFYING FRACTIONS**

1a) 1/4 b) 1/4 c) 1/3 d) 5/7 e) 4/9

f) 9/20 g) 2/5 h) 1/7 i) 1/8

**ASSIGNMENT 11 – CALCULATING SLOPE OF A LINE**

1a) 0.25 **up** to right b) -0.5 **down** to right

c) -0.2 **down** to the right d) -1.5 **down** to the right

2a) positive, 1 b) negative, -1 c) negative, -0.75 d) positive, 0.5

3) points include (6,8) (5,5) (3,-1) (2,-4) (1, -7) (0, 10)

**ASSIGNMENT 12 – SPECIAL SLOPES**

1) Undefined, Zero 2) undefined, zero slope

3a) vertical, undefined b) Neither, -3/5 c ) Neither, 1/60 d) Horizontal, 0

**ASSIGNMENT 13 – DEPENDENT AND INDEPENDENT VARIABLES**

1a) i = # of paperclips d = mass of paperclips

b) i = time I rode my bike d= distance travelled on my bike

c) i = # of boxes sold d = profit made

d) i = # of stamps I bought d = total cost

e) i = amount of sales d = commission earned

**ASSIGNMENT 14 – RATE OF CHANGE**

1a) independent – time elapsed dependent – volume of water remaining

b) -13.3

c) V = -13.3 × t

2a) independent – sales dependent – commission earned

b)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sales | $1000 | $2000 | $5000 | $8000 | $9000 |
| Commission earned | $150 | $300 | $750 | $1200 | $1350 |

c) graph – ask teacher to review when complete

d) 0.15

e) C = 0.15 × s

3) -10

4a)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Hours | 1 | 6 | 5 |  |  |
| Daniel’s earnings | $12.20 | $73.20 | $61.00 |  |  |
| Henrick’s earnings | $11.10 | $66.60 | $55.50 |  |  |

c) Daniel

d) Daniel earns $12.20/h Henrick earns $11.10/h

5) Graph A = 16.7 Graph B = 1; Graph A has a steeper slope.

6) A -4 B -1.33 C 0 D 2 E 4

7a) graph – ask teacher to review when complete. b) 70 km/h c) 140 km d) 9 h