Unit 1: Square Root and Pythagorean Theorem

1) the product of a rational number multiplied by itself.

1, 4, 9, 16, 25, 36, 49, 64, 81, 100, 121, 144, 169, 196, 225

2) 1296, ±6

 Multiply a number by itself

To find the number, when multiplied by itself gives the ‘square’

3) Squared to find area, Square rooted to find side length
 Area = 256 Side Length = 4

4) Use bench marks. Good estimate is 6$\frac{1}{13}$

5) Hypotenuse is the longest side of triangle and opposite to right angle

6) The square of the hypotenuse is equal to the square of the legs.

7a) 5cm b) $√11$cm

8) A Pythagorean triple is when the sides of a right triangle fit into the Pythagorean theorem exactly 144 ≠81 + 64 It is not a Pythagorean triple

Unit 2: Integers

1a) 35 b) -11 c) 11 d) -35

2a) -11 b) 35 c) -35 d) 11

3a) 48 b) -48 c) -48 d) 48

4a) 6 b) -6 c) -6 d) 6

5)

6) sum is when adding numbers, difference is when subtracting numbers, product is when multiplying, quotient is when dividing.

7) 10

8) order of operations are the rules followed when simplifying or evaluating an expression ex BEDMAS.

9a) -1 b) 15.5 c) 21 d) -440

Unit 3: Operations with Fractions

1a) $\frac{1}{3}$ b) $\frac{17}{20}$

2a) $\frac{4}{7}$ b) $\frac{25}{56}$

3) $3\frac{3}{4}$ b) $2\frac{3}{8}$ c) 3 d) $\frac{7}{3}$ e) $\frac{35}{8}$ f) $\frac{41}{7}$

4a) $\frac{6}{25}$ b) $\frac{36}{48}$ c) $\frac{325}{36}$ d) $\frac{24}{7}$

5a) $\frac{35}{24}$ b) $\frac{25}{12}$ c) $\frac{60}{40}$ d) $\frac{21}{2}$

6a) $\frac{56}{105}$ b) $\frac{38}{16}$

7)

8a) 17/24 b) 8 dresses

9a) $\frac{7}{18}$ b) $\frac{40}{12}$ c) $\frac{17}{30}$ d) $\frac{24}{30}$ e) $\frac{52}{180}$

Unit 4: Measure Prisms and Cylinders

1) prism has 2 bases, pyramid has one base and comes to a point

2)

3) surface are is the area of all the surfaces added together. Volume is the amount of space occupied by an object

4) SA = 1216 V = 2560

5) SA = 144 V = 66

6) SA = 816.81 V = 1649.34

Unit 5: Percent, Ratio and Rates

1a) $\frac{4}{10000}$ , 0.0004 b) $\frac{4.25}{100}$ , 0.0425 c) $\frac{4.4}{100}$ , 0.044

2a) 0.375 , 37.5% b) 0.67 , 66.67% c) 0.001 , 0.1%

3a) 68.2% , $\frac{682}{1000}$ b) 0.45% , $\frac{45}{10000}$ c) 170% , $\frac{170}{100}$

4a)i) 40 ii) 450 iii) 40
 b)i) 900 ii) 3000 iii) 20
 c)i) 192 ii) 144 iii) 496
 d) $558000

5a)i) 6.39 ii) 12.5%
 b)i) 23.53% ii) 20%
 c) 357
 d) 68
 e) $58.08

6a)i) $319.60 ii) $1278.40 iii) $1342.32
 b)i) 12.05% ii) $52.49
 c)i) $360 ii) $378

7a)i) 3:4 ii) 4:2 iii) 2:9
 b)i) 1:3 ii) 2:5 iii) 4:3:5 iv) 1:4:3
 c) 3:15:21 and 2:10:14
 2:7 and 8:28
 3:6 and 9:18
 20:50 and 2:5
 10:18 and 5:9
 24:30:42 and 2:10:14

d) 189

8a)i) 40km/h ii) 5 plates/min
 b)i) Komal ii) $88
 c)i) 8 oranges for $2.77 ii) 1L for $1.32 iii) 2kg for $3.90
 d) 31.25kg

Unit 6: Linear Equations and Graphing

1a) 8 b) -3

2a) 5 b) 4

3a) 6 b) -2 c) -3 d) 36 e) 117 f) -78

3a) 5x + 30 b) 35 – 7e c) -3x + 24 d) -24 + 4e e) -16n + 32 f) 44y – 12

4a) 5 b) -2 c) 6 d) -3

5)

|  |  |
| --- | --- |
| -3 | -11 |
| -2 | -9 |
| -1 | -7 |
| 0 | -5 |
| 1 | -3 |
| 2 | -1 |
| 3 | 1 |

6) -6x + 1

7) (1, 5) (3, -1) (4, -4)

8a) $49 b) 7 rides

Unit 7: Data Analysis and Probability

1) discrete data is data that can be counted. Continuous data cannot be counted, it is infinite

2) answers may vary

3)

4) a)1/5 b)12/52=3/13

5)a)1/216 b)1/72 c)2/36 = 1/18

Unit 8: Geometry

1) vertical axis is the axis going up/down, you rotate a shape horizontally around it. horizontal axis goes left/right and you rotate a shape vertically around it

2) horizontal rotation is clockwise/counter-clockwise around the vertical axis. Vertical rotation is towards/away from you around the horizontal axis.

3)…they are on different planes

4) rotation/reflection/translation