

Review Math

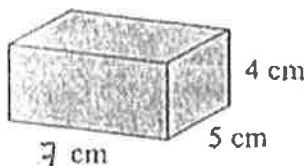
Name: Key

Div.: _____

Date: _____

<u>Volume</u> = Area of Base x height	<u>Surface Area</u> = Sum of the Area of each face
<u>Area Formulas</u>	
Square = length x width	Triangle = base x height ÷ 2
Rectangle = length x width	Trapezoid = [(Base + Top) x Height] ÷ 2
<u>Circle Formulas</u>	
Area = πr^2	Circumference = $\pi 2r$ or πd

1) Find the surface area and volume of the following shapes:

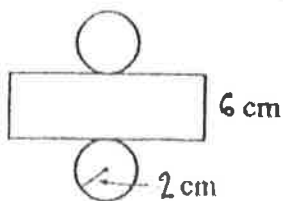


$$\begin{aligned} V &= 7 \times 5 \times 4 \\ &= 35 \times 4 \\ &= 140 \end{aligned}$$

Surface Area: 166 cm²

Volume: 140 cm³

$$\begin{aligned} \text{S.A.} &= 2[(7 \times 5) + (7 \times 4) + (5 \times 4)] \\ &= 2(35 + 28 + 20) \\ &= 2(83) \\ &= 166 \end{aligned}$$



$$\begin{aligned} V &= \pi r^2 \times h \\ &= 2^2 \pi \times 6 \\ &= 4\pi \times 6 \end{aligned}$$

Surface Area: 100.48 cm² ~~32π~~

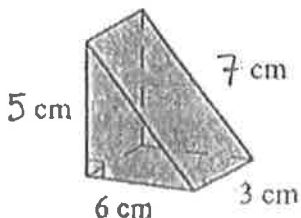
Volume: 75.36 cm³

$$\begin{aligned} \text{S.A.} &= \pi r^2 \times 2 + (\text{Circle} \times 2) \\ &= \pi 2^2 \times 2 \\ &= 4\pi \times 2 \\ &= 8\pi \end{aligned}$$

Rectangle = $\pi 2r \times h$
 $= \pi 2(2) \times 6$
 $= 24\pi$

$8\pi + 24\pi = 32\pi$

$$\begin{array}{r} 3.14 \\ \times 32 \\ \hline 628 \\ 9420 \end{array}$$



$$\begin{aligned} \text{Vol} &= \left(\frac{5 \times 6}{2}\right) \times 7 \\ &= 15 \times 7 \end{aligned}$$

Surface Area: 84 cm²

Volume: 45 cm³

$$\text{S.A. } 30 = \left(\frac{5 \times 6}{2}\right) \times 2 \text{ Triangles}$$

$$\begin{aligned} 21 &= 7 \times 3 & 18 &= 6 \times 3 \\ 15 &= 5 \times 3 & & \end{aligned}$$

$$\begin{array}{r} 30 \\ 21 \\ 15 \\ \hline 18 \\ 84 \end{array}$$

Solve using the given information:

- 2) The basement of a 20m by 19m house has a cement foundation poured to a thickness of 8cm. If the cement costs \$68 per square meter, how much will the cement cost?

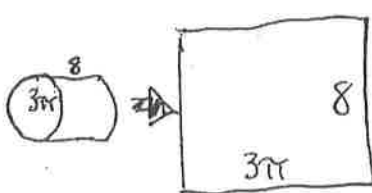
$$\begin{array}{r} 20\text{m} \\ \times 19\text{m} \\ \hline 180 \\ 200 \\ \hline 380\text{m}^2 \end{array}$$

Cubic
380 \swarrow Same units

$$\begin{array}{r} 30.4\text{m}^3 \\ \times 68 \\ \hline 2432 \\ + 18240 \\ \hline 2067.2 \end{array}$$

\$ 2067.20

- 3) How much wall area will be covered in 6 revolutions of a paint roller that is 8cm wide and has a circumference of 3π ?



$$\begin{array}{r} 8 \\ \times 3\pi \\ \hline 24\pi \end{array} \times 6 \text{ revolutions}$$

$$\begin{array}{r} 24\pi \\ \times 6 \\ \hline 144\pi \end{array}$$

$$\begin{array}{r} 144 \\ \times 3.14 \\ \hline 452.16\text{cm}^2 \end{array}$$

Show all work!

Add.

4) $\frac{2}{5} + \frac{1}{5} = \frac{3}{5}$

5) $\frac{3 \times 4}{5} + \frac{2 \times 5}{3} = \frac{12 + 10}{15} = \frac{22}{15}$

6) $1\frac{1}{2} + 1\frac{3}{4} = 3\frac{1}{4}$
 $2 + \frac{5}{4}$

7) $8/3 + 1\frac{1}{2} = \frac{16+9}{6} = \frac{25}{6}$
 $2 \times \frac{8}{3} + \frac{3 \times 3}{2}$

Subtract.

8) $\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$

9) $1\frac{1}{2} - \frac{3}{4} = \frac{3}{4}$
 $1\frac{2}{4} = \frac{6}{4}$

10) $\frac{7}{3} - \frac{2}{3} = \frac{5}{3}$

11) $\frac{3 \times 4}{5} - \frac{2 \times 5}{3} = \frac{12 - 10}{15} = \frac{2}{15}$

12) $1\frac{1}{3} - \frac{2}{3} = \frac{4}{3} - \frac{2}{3} = \frac{2}{3}$

13) $12 - 1\frac{8}{11} = 10\frac{3}{11}$
 $11 - \frac{8}{11}$

$$14) \quad \frac{3}{1} \times \frac{1}{8} = \frac{3}{8}$$

$$15) \quad \frac{4}{3} \times \frac{2}{1} = \frac{8}{3}$$

$$16) \quad \frac{8}{7} \times \frac{1}{2} = \frac{4}{7}$$

$$17) \quad \frac{7}{8} \div \frac{4}{5} = \frac{35}{32}$$

$$18) \quad 1 \frac{1}{3} \times 1 \frac{1}{2} = 2$$

$$19) \quad 1 \frac{1}{5} \times 1 \frac{1}{2} = \frac{9}{5}$$

$$20) \quad \frac{5}{3} \div \frac{17}{6} = \frac{30}{17}$$

$$21) \quad \frac{9}{2} \div \frac{5}{4} = \frac{18}{5}$$

22) Fill in the following table (fraction in lowest terms):

Fraction	Decimal	Percent
$\frac{1}{5}$	0.2	20%
$\frac{35}{10000} = \frac{7}{2000}$.0035	0.35%
$\frac{3}{5}$	0.6	60%
$3 \frac{1}{4}$	3.25	325%
$\frac{35}{10000} = \frac{1}{2000}$	0.0005	0.05%
$\frac{6}{5}$	1.2	120%
$2 \frac{1}{20}$	2.05	205%
$\frac{3}{8}$.375	37.5%

23) Find the number:

a. 30% of 70

$$\begin{array}{r} 70 \\ \cdot 3 \\ \hline 21.0 \end{array}$$

(21)

c. 50% of 94

$$\begin{array}{r} 94 \\ \times .5 \\ \hline 47.0 \end{array}$$

(47)

b. 120% of 5

$$\begin{array}{r} 5 \\ \times 1.2 \\ \hline 10 \\ 50 \\ \hline 6.0 \end{array}$$

(6)

d. 105% of 20

$$\begin{array}{r} 20 \\ \times 1.05 \\ \hline 21.00 \end{array}$$

(21)

24) A watch is on sale for \$120, which is 30% off its regular price. What does the watch regularly cost?

(\$171.42)

$$\frac{120}{x} = \frac{70}{100} \leftarrow \begin{array}{l} 30\% \text{ off} \\ \text{means } 70\% \\ \text{left.} \end{array}$$

$$120(100) = 70x$$

$$x = 7 \overline{)1200} = 171.42$$

$$\frac{12000}{70} = x$$

25) A camera normally costs \$29.75, but is put on sale for 30% off.

e. How much money are you saving?

$$\begin{array}{r} 29.75 \\ \times .3 \\ \hline 8.925 \end{array}$$

(\$8.93)

f. What is the Sale Price?

$$\begin{array}{r} 29.75 \\ - 8.93 \\ \hline 20.82 \end{array}$$

(\$20.82)

g. What is the final price with 12% tax?

$$\begin{array}{r} 20.82 \\ \times 1.12 \\ \hline 23.3184 \end{array}$$

23.3184

(\$23.32)

Solve for x (show your work).

26) $6 : x = 21 : 7$

$$\frac{6}{x} = \frac{21}{7}$$

(x = 2)

$$6 \cdot 7 = 21 \cdot x$$

$$\frac{42}{21} = \frac{21x}{21}$$

27) $x : 15 = 10 : 25$

$$\frac{x}{15} = \frac{10}{25}$$

$$25x = 15 \cdot 10$$

$$\frac{25x}{25} = \frac{150}{25}$$

(x = 6)

Find the Unit Rate (Show your work)

28) 650mL of juice shared among 5 people

$$\frac{650}{5} = \frac{x}{1}$$

(130 = x)

$$\frac{650 \cdot 1}{5} = \frac{5x}{5}$$

130 mL / 1 person

29) \$32 for 25 cups

$$\frac{32}{25} = \frac{x}{1}$$

(\$1.28/cup)

$$\begin{array}{r} 1.28 \\ 25 \overline{)32.00} \\ \underline{25} \\ 70 \\ \underline{50} \\ 200 \end{array}$$

Solve (show work where necessary):

$$30) \quad (+6) - (-8) =$$

$$= (+6) + (+8)$$

$$= 14$$

$$31) \quad (-4) - (+3) =$$

$$= (-4) + (-3)$$

$$= (-7)$$

$$32) \quad (-3) - (-5) + (-4) =$$

$$= (-3) + (+5) + (-4)$$

$$= (-7) + (+5)$$

$$= (-2)$$

$$33) \quad (+12) - (-4) - (+7) =$$

$$= (+12) + (+4) + (-7)$$

$$= 16 + (-7)$$

$$= 9$$

$$34) \quad 7(-5) + 4(-5) =$$

$$= 11 - 10$$

$$= 1$$

$$35) \quad (-7)(-5) + 4 + 5 = -3$$

$$= 35 + 9$$

$$= 44$$

Find the Product/ Quotient (Show work where necessary):

$$36) \quad (-7)(-3)(-2) =$$

$$= (+21)(-2)$$

$$= -42$$

ODD # of negatives gives you a negative result!

$$37) \quad (+3)(+2)(-6) =$$

$$= (6)(-6)$$

$$= -36$$

$$38) \quad (-6) \div (+2) =$$

$$= -3$$

$$39) \quad (-12) \div (-4) =$$

$$= +3$$

Solve (Show all Work):

40) A map shows that Victoria is 5cm from Nanaimo. If the scale is 1: 4000000 how far is it from Victoria to Nanaimo in km?

$$\frac{5\text{cm}}{x\text{cm}} = \frac{1}{4000000}$$

$$20,000,000\text{cm} = 1 \cdot x\text{cm}$$

$$x = 20,000,000\text{cm}$$

$$x = 200\text{km}$$

41) Which is the better deal? \$4.20 for 15 cans of Pepsi, or \$3.35 for 12 cans?

$$\frac{\$4.20}{15} = \frac{\$2.80}{5} = \frac{\$16.80}{60}$$

$$\frac{\$3.35}{12} = \frac{\$13.40}{48} = \frac{\$16.75}{60}$$

\$3.35/12 is better

$$12 \overline{) 3.35} = 0.279$$

$$15 \overline{) 4.20} = 0.28$$

Prime Factor and determine if it is a perfect square:

$$42) \sqrt{324} \quad (2 \times 9) \times (2 \times 9)$$

$$\begin{array}{c} \wedge \\ 4 \quad 81 \\ \wedge \quad \wedge \\ 2 \quad 2 \quad 9 \quad 9 \end{array}$$

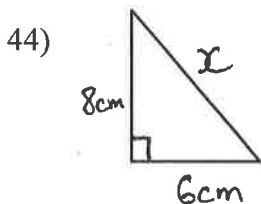
$$(18 \checkmark)$$

$$43) \sqrt{225} \quad (5 \times 3) \times (5 \times 3)$$

$$\begin{array}{c} \wedge \\ 5 \quad 45 \\ \wedge \quad \wedge \\ 5 \quad 9 \\ \wedge \quad \wedge \\ 3 \quad 3 \end{array}$$

$$(15 \checkmark)$$

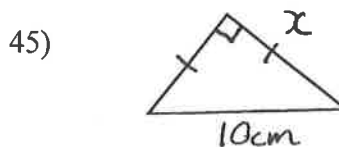
Find x



$$8^2 + 6^2 = x^2 \quad x^2 = 100$$

$$64 + 36 = x^2 \quad x = \sqrt{100}$$

$$(x = 10)$$



$$10^2 = x^2 + x^2$$

$$\frac{100}{2} = \frac{2x^2}{2}$$

$$x^2 = 50$$

$$x = \sqrt{50}$$

$$(x = 7\frac{1}{5} = 7.1)$$

$\sqrt{49} = 7$
 $\sqrt{64} = 8$

Write out the following in equation form:

46) Three less than two times a number is ten.

$$-3 \quad 2 \cdot x \cdot n = 10$$

$$2n - 3 = 10$$

47) Six more than a number divided by three is twelve.

$$(6 + n) \div 3 = 12$$

$$\frac{6+n}{3} = 12$$

Evaluate (Show your work).

48) $2x = 5x - 6$

$$\begin{array}{r} -5x \\ -7x \\ -3x = -6 \end{array}$$

$$\frac{-3x}{-3} = \frac{-6}{-3}$$

$$(x = 2)$$

49) $4x - 8 = 2x$

$$\begin{array}{r} -4x \\ -4x \\ -8 = -2x \end{array}$$

$$\frac{-8}{-2} = \frac{-2x}{-2}$$

$$(x = 4)$$

50) $\frac{x}{2} - 5 = 3$

$$\begin{array}{r} +5 \\ +5 \end{array}$$

$$\frac{x}{2} = 8$$

$$\frac{x}{2} \times 2 = 8 \times 2$$

$$(x = 16)$$

51) $-\frac{x}{3} + 5 = -1$

$$\begin{array}{r} -5 \\ -5 \end{array}$$

$$-\frac{x}{3} = -6$$

$$\frac{x}{-3} \times -3 = -6 \times -3$$

$$(x = 18)$$

52) $2x + 5 = 13$

$$\begin{array}{r} -5 \\ -5 \end{array}$$

$$2x = 8$$

$$\frac{2x}{2} = \frac{8}{2}$$

$$(x = 4)$$

53) $(x + 3) \div 2 = 9$

$$\begin{array}{r} \times 2 \\ \times 2 \end{array}$$

$$x + 3 = 18$$

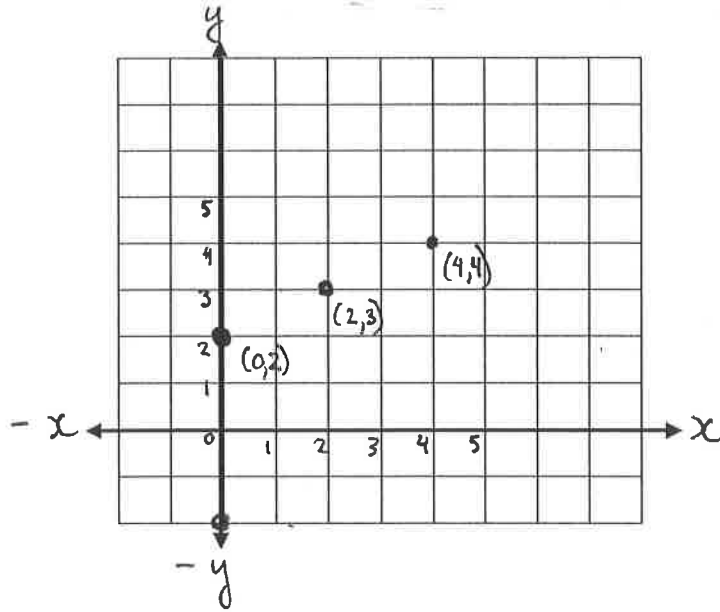
$$\begin{array}{r} -3 \\ -3 \end{array}$$

$$(x = 15)$$

54) Fill in the following table of values and graph the line.

$$y = \frac{x}{2} + 2$$

x	y
0	2
2	3
4	4



55) Fill in the following table of values and graph the line.

$$y = 2x - 1$$

x	y
0	-1
1	1
2	3

