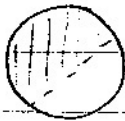


# Math 9 Final Review Ans.

- a) whole # : 1, 0, 225,  $\sqrt{9}$ ,  $\frac{9}{1}$   
 b) rational # : -2.5,  $\frac{9}{1}$ , 1, -10,  $\sqrt{9}$ ,  $3\frac{5}{7}$ , 225  
 c) natural # : 1,  $\sqrt{9}$ , 225,  $\frac{9}{1}$   
 d) integers :  $\frac{9}{1}$ , 1, -10,  $\sqrt{9}$ , 0, 225  
 e) irrational :  $\sqrt{25}$ , 1.010010001...  
 f) real # : -2.5,  $\frac{9}{1}$ , 1, -10,  $\sqrt{9}$ ,  $\sqrt{25}$ , 0, 1.010010001...,  $3\frac{5}{7}$ , 225

- 2a) 2  
 b) 2  
 c) 6  
 d)  $\sqrt{8.1}$  is irrational  
 e)  $\sqrt{-4}$  can't be simplified

- a) 1  
 b)  $x+1$   
 c) 2  
 d) 1  
 e) 6  
 f) 1  
 g) -1
- 8)  $4^{k+13}$   
 j) 441  
 k) 100  
 l)  $-64/27$   
 m)  $25^{3m-4}$  or  $5^{6m-8}$   
 n)  $2^{-9a-9}$

3)   $A = \pi r^2 \times \frac{1}{2}$   
 $(50\pi = \frac{1}{2} \pi r^2) \cdot 2$   
 $100\pi = \pi r^2$   
 $\pi$   
 $r^2 = 100$   
 $r = \sqrt{100}$   
 $= 10$

$\therefore d = 20 \text{ cm}$

- a) 144  
 b) -64  
 c) 64  
 d) 15  
 e) 11  
 f) -1
- 9)  $-0.\overline{3}$ ,  $-0.\overline{303}$ ,  $-0.\overline{30}$ ,  $-0.\overline{300}$ ,  $-0.\overline{3}$
- a)  $>$   
 b)  $>$   
 c)  $<$   
 d)  $=$

a)  $x^2 + x^2 = 8^2$   
 $2x^2 = 64$   
 $x^2 = 32$   
 $x = \sqrt{32}$

- a)  $>$   
 b)  $<$   
 c)  $<$   
 d)  $>$

- a)  $-2.53$   
 b) 12.04  
 c) 9.4  
 d) -6.283  
 e)  $\frac{32}{15}$   
 f)  $-97/84$   
 g)  $4/8$   
 h)  $-271/36$

$\sqrt{25} = 5$   
 $\sqrt{32} \approx 5.7$   
 $\sqrt{36} = 6$   
 $\sqrt{32} \approx 5.7$

- a) 26  
 b) -52  
 c) 6  
 d) -25

- a) -1.96  
 b) -136.53  
 c) -26.75  
 d) -11.56

$\sqrt{32} \approx 5.7$

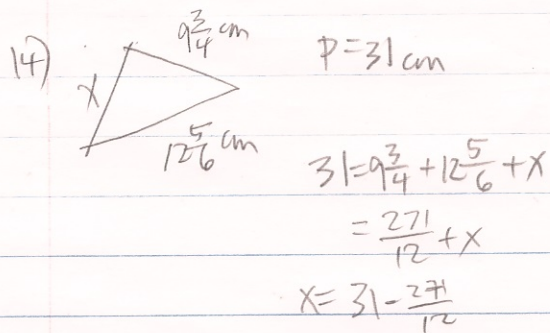
- b)  $\sqrt{9.25} \approx 3.1$   
 e)  $\sqrt{2} \approx 1.3$   
 d)  $\sqrt{2} \approx 0.5$

$\sqrt{72} \approx 8.5$

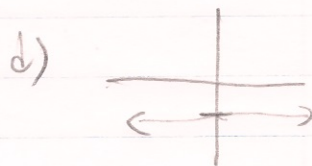
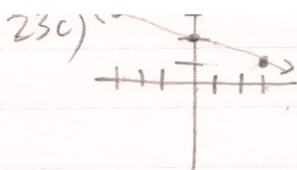
- e)  $\frac{1}{a^2}$   
 f) -48  
 g)  $-8/3$   
 h) -36

13)  $10\frac{3}{4} \text{ cm} = 10.75 \text{ cm} = 0.1075 \text{ m}$

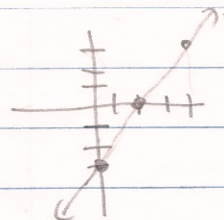
$\text{Mom} = 1.9 - 0.1075$   
 $= 1.7925 \text{ m}$



$= \frac{101}{12} \approx 8.4 \text{ cm}$



e)  $3x - 2y = 6$   
 $\frac{3x - 6 = 2y}{2}$   
 $y = \frac{3}{2}x - 3$



24)  $y = 650 + 0.08x$

a15)  $-\frac{121}{60}$

b)  $-\frac{11}{16}$

c)  $\frac{56}{9}$

d) 48

e)  $\frac{319}{60}$

f)  $\frac{7}{8}$

g)  $\frac{15}{28}$

h)  $\frac{1426}{695}$  Lol whoops sorry

1b)  $4\frac{3}{4}$  cups of sugar

a17) 36, 43, 50

b) 16, 21, 26

c) 4.6, 8.2, 11.8

a18) 351

b) 241

c) 166.6

a19) no

b) yes

c) no

d) no

e) yes

a20) 4

b) -7

c) -1

d) 0

a21) -2

b)  $-\frac{1}{3}$

c) 0

d) no slope,  $\emptyset$

a25) 0

b) 1

c) 5

d) 3

a26)  $-x^2 - x - 1$

b)  $x^2 - 2x - 1$

a27)  $-3xy + 7y$

b)  $x^2 + 2x - 1$

c)  $7xy - 3x$

d)  $30xy^2 + 7xy$

e)  $-abc + 4a^2b + ab^2 - bc - 8ab$

a22)  $y = 2x$

b)  $y = -\frac{4}{3}x - 3$

c)  $y = \frac{1}{2}x + 3$

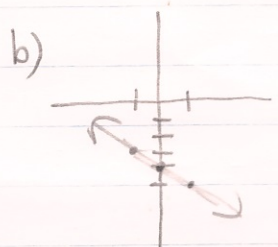
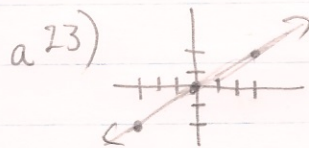
d)  $y = -4$

e)  $x = -2.5$

a28)  $16x + 1$

b)  $12\pi$

c)  $20\pi x^2 - 8\pi$



a29)  $-48x + 96$

b)  $7x^3y - 56x^6$

c)  $-54a^6b^4 - 66a^3b^{11}$

d)  $36x^4y^3z^3 - 72xy^4z^4$

$$29e) -2x^2 - 12xy + 5y^2$$

$$f) 14x^2 - 8x + 12$$

$$g) 4x + 3y^5$$

$$a30) 2x^2 - 11x + 12$$

$$b) 3x^2 + 6x + 12$$

$$c) x^2 - 6$$

$$a31) 1$$

$$b) x - 2$$

$$c) 9x^2 - 6x - 5$$

a32) Look up in

workbook

$$a33) 52$$

$$b) 12$$

$$c) 26$$

$$d) 24$$

$$34) \$823.50$$

$$a35) \$880.77$$

$$b) \$33.03$$

$$a36) \$15.82$$

$$b) \$1400.11$$

$$a37) \$32.59/h$$

$$b) \$2916.67$$

$$c) \$22/h \text{ summer school}$$

$$\$31.48/h \text{ over entire year}$$

$$38) 525 + 0.045(8950 - 5600)$$

$$= 525 + 0.045(3350)$$

$$= 525 + 150.75$$

$$= \$675.75$$

$$39) \text{ Reg} + \text{OT} = 12675$$

$$325(30) + 325(1.5)x = 12675$$

$$9750 + 487.5x = 12675$$

$$-9750$$

$$-9750$$

$$487.5x = 2925$$

$$\underline{487.5}$$

$$x = 6.$$

She worked 6h OT.

$$40) \begin{array}{cc} \text{Reg} & \text{OT} \\ 40(10.68) + 40(1.5)(62-40) \end{array}$$

$$= 427.20 + 60(22)$$

$$= 427.20 + 1320$$

$$= \$1747.20$$

41) Let  $x$  be reg. pay rate

$$\text{Reg} + \text{OT} = 1128$$

$$35x + 8(1.5)x = 1128$$

$$35x + 12x = 1128$$

$$47x = 1128$$

$$\underline{47}$$

$$x = 24$$

Ripley's wage is \$24/h.

$$42) 36750 \div 26 = \$1413.46 \text{ per pay period}$$

$$\text{rate per hour: } \frac{\$1413.46}{2 \text{ weeks}} = \frac{\$1413.46}{37(2) \text{ h}} = \frac{\$19.10}{74 \text{ h}} = 1 \text{ h}$$

$$\text{Pay} = \text{Reg} + \text{OT}$$

$$= 1413.46 + 19.10(2)5$$

$$= \$1604.46$$

$$43) I = Prt$$

$$= 3250(0.0375)\frac{16}{12}$$

$$= \$162.50 //$$

50) Simple Interest

$$I = Prt \quad A = P + I$$

Let  $P$  = initial investment  
(principal)

$$44) A = P + I \quad I = Prt$$

$$4000 = 2000 + I \quad 2000 = 2000(0.08)t$$

$$I = 2000 \quad 2000 = 160t$$

$$t = \frac{2000}{160}$$

$$= 12.5 \text{ y}$$

$$12.5 \text{ y} \left( \frac{365 \text{ d}}{1 \text{ y}} \right) = 4562.5 \text{ days} //$$

$$A = 3P \quad \text{so } A = P + I$$

$$3P = P + I$$

$$\begin{matrix} -P & & +P \\ 2P & = & I \end{matrix}$$

$$I = Prt$$

$$(2P) = Pr8$$

$$8P$$

$$\frac{2P}{8P} = r$$

$$0.25 = r$$

The interest rate is 25%.

$$45) 3 \times 16 = 48$$

$$48/500 \cdot 100 = 9.6\% //$$

$$46) I = Prt \quad \text{Oops, let's say for 1 year.}$$

$$154.73 = P(0.025)1$$

$$\frac{154.73}{0.025}$$

$$P = \$6189.20 //$$

$$47) A = P\left(1 + \frac{r}{n}\right)^{nt}$$

$$= 6200\left(1 + \frac{0.075}{4}\right)^{4(3)}$$

$$= 6200(1.01875)^{12}$$

$$= 6200(1.249716377)$$

$$= \$7748.24 //$$

$$48) A = P\left(1 + \frac{r}{n}\right)^{nt}$$

$$= 12000\left(1 + \frac{0.095}{12}\right)^{12(18)}$$

$$= \$65,902.30 //$$

$$49) A = P\left(1 + \frac{0.10}{12}\right)^{12(1)}$$

$$= P(1.104713...)$$

$$A = P\left(1 + \frac{0.101}{4}\right)^{4(1)}$$

$$= P(1.104890175)$$

Compare using  
time = 1 year

Compounded quarterly is better.

a 51) 10.4

b)  $\frac{22}{15}$

c) 55.5

d)  $1\frac{1}{3}$

e)  $-\frac{1}{9}$

f)  $\frac{324}{95}$

g) -8.98

h) 0.75

i) 6

j)  $\frac{1}{11}$

k)  $-\frac{100}{9}$

l) -30

m) -3

55)  $450 + 24x < 2000$   
 $-450 \quad -450$

$\frac{24x < 1550}{24}$

$x < 64.58\bar{3}$

64 people can attend the grad dinner.

56) mean:  $\frac{557}{26} = 21.4$

median:  $\frac{21+22}{2} = 21.5$

mode: 24

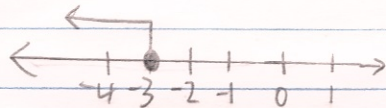
57) exaggerate area/volume  
displace axis  
irregular scale

52) 191, 193, 195

53) 15 years of age

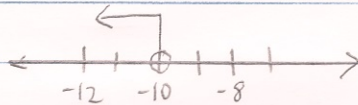
a 58) 1H 1T 2H 2T 3H 3T  
4H 4T 5H 5T 6H 6T

a 54)  $x \leq -3$



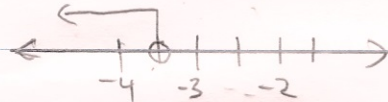
b)  $\frac{3}{12} = \frac{1}{4}$

b)  $x < -10$



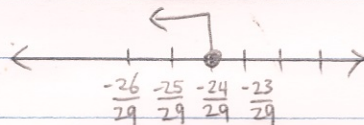
59)  $1 - 0.45 = 0.55$

c)  $x < -3.5$



a 60)  $\frac{6}{36} = \frac{1}{6}$

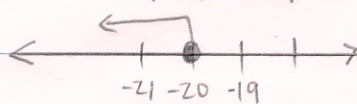
d)  $x \leq -\frac{24}{29}$



b)  $\frac{2}{36} = \frac{1}{18}$

c)  $\frac{6}{36} = \frac{1}{6}$

e)  $x \leq -20$

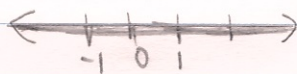


d)  $\frac{10}{36} = \frac{5}{18}$

e)  $\frac{18}{36} = \frac{1}{2}$

6 | e)  $P(\text{face}) + P(\heartsuit) - P(\text{face } \heartsuit)$   
 $= \frac{12}{52} + \frac{1}{4} - \frac{3}{52}$   
 $= \frac{11}{26}$

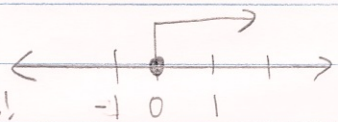
f)  $x > -5$  true so IR



a 61)  $\frac{12}{52} = \frac{3}{13}$

g)  $x \geq 0$

finally one life this!



b)  $\frac{1}{2}$

c)  $\frac{1}{4}$

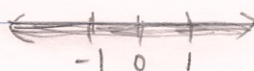
d)  $\frac{3}{52} = \dots$

6 | f)  $\frac{40}{52} = \frac{10}{13}$

g) 0

h)  $\frac{3}{13}$

h)  $x \geq 1$  true so IR



$$62) SF = \frac{i}{o} = \frac{23}{45} = 0.51 \text{ or } \frac{23}{45}$$

$$63) SF = \frac{i}{o} = \frac{19}{8} = 2.375$$

$$64) \frac{1}{9_{\text{real}}} \overset{\text{doll house}}{=} \frac{3_{\text{cm}}}{x_{\text{real}}}$$

$x = 27 \text{ cm}$  That's a tiny chair!

65) 200m

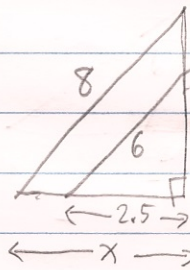
a) 66) 16

b) 12

c)  $x = 8$

$y = 24$

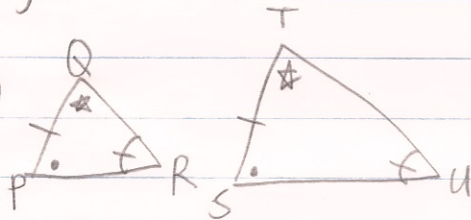
67)



$$\frac{6}{2.5} = \frac{8}{x}$$

$$x = 3.3 \text{ m}$$

68)



$$a) \frac{PQ}{ST} = \frac{QR}{TU} = \frac{RP}{US}$$

$$b) \angle P = \angle S$$

$$\angle Q = \angle T$$

$$\angle R = \angle U$$

$$a) 69) \frac{8}{3} = 2.67$$

d) 30

g) not enough info

b) 27

e)  $86^\circ$

c) 4

f)  $42^\circ$

