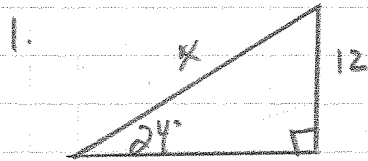


Unit 1 Trig:



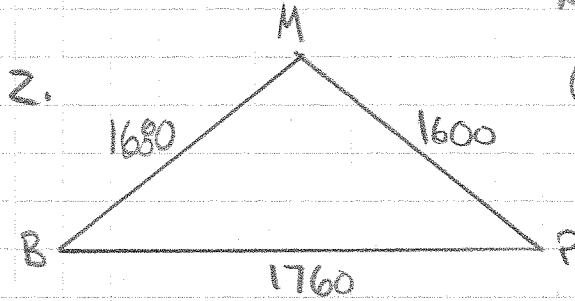
$$\sin 24^\circ = \frac{12}{x}$$

∴ the wire is approx

$$x = \frac{12}{\sin 24^\circ}$$

29.5m

$$x = 29.5$$



$$\textcircled{1} \cos B = \frac{1760^2 + 1680^2 - 1600^2}{2(1760)(1680)}$$

$$\cos B \approx 0.5682$$

$$\angle B \approx 55^\circ$$

$$\textcircled{2} \cos M = \frac{1680^2 + 1600^2 - 1760^2}{2(1600)(1680)}$$

$$\textcircled{3} \angle P = 180^\circ - 55^\circ - 65^\circ$$

$$= 60^\circ$$

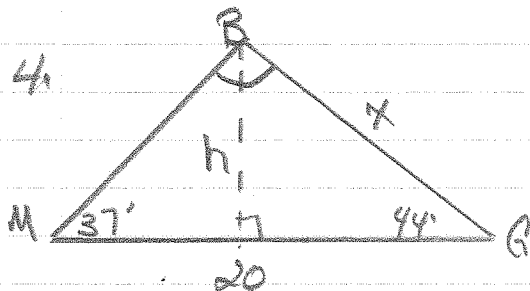
$$\cos M = 0.425$$

$$\angle M \approx 65^\circ$$

$$3. \frac{x}{\sin 37^\circ} = \frac{7}{\sin 28^\circ}$$

$$x = \frac{7 \sin 37^\circ}{\sin 28^\circ}$$

$$= 8.97$$



① Find other side of Big Δ: x
need ∠B
 $\angle B = 180 - 37 - 44 = 99^\circ$

$$\textcircled{2} \frac{x}{\sin 37^\circ} = \frac{20}{\sin 99^\circ}$$

$$x = \frac{20 \sin 37^\circ}{\sin 99^\circ}$$

③ Find h



$$\sin 44^\circ = \frac{h}{12.19}$$

$$12.19 \sin 44^\circ = h$$

$$8.47 = h$$

Unit 2 Stats + Prob

5. total cards 9's = 4
 10's = 4
 Ace = 4
 King = 4
 Queen = 4
 Jack = 4

Total # of cards = 4×6
 $= 24$

a) $P(\text{face}) = \frac{12}{24}$
 $= \frac{1}{2}$

b) $P(\text{red}) = \frac{12}{24}$
 $= \frac{1}{2}$

c) $P(9 \text{ or } 10) = \frac{8}{24}$
 $= \frac{1}{3}$

d) $P(7 \text{ or } 2) = \frac{0}{24}$
 $= 0$

6. a) Deer = $0.3(1200)$
 $= 360$

∴ there are 1200 deer

b) $45 = 0.1(\text{total})$
 $\frac{45}{0.1} = \text{total}$

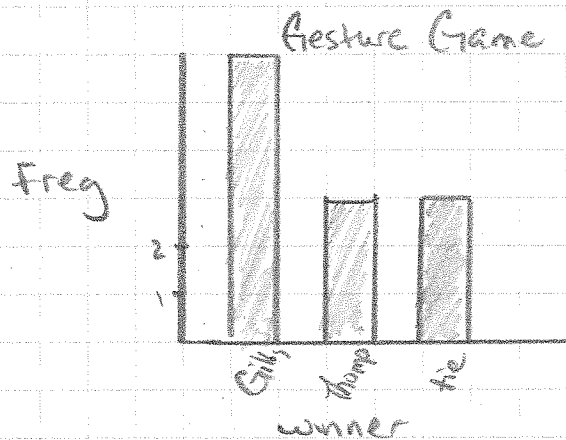
Foxes = $0.25(450)$
 $= 112.5$

450 = total

∴ there are approx 113 foxes

7.

Outcome	Freq
Gilby	HHI
Thompson	III
tie	III



Unit 3 Quadratics

8 a) $(2x+8)(x-9)$

$$= 2x^2 - 18x + 8x - 72$$

$$= 2x^2 - 10x - 72$$

b) $-3(x+2)(x+2) - 5$

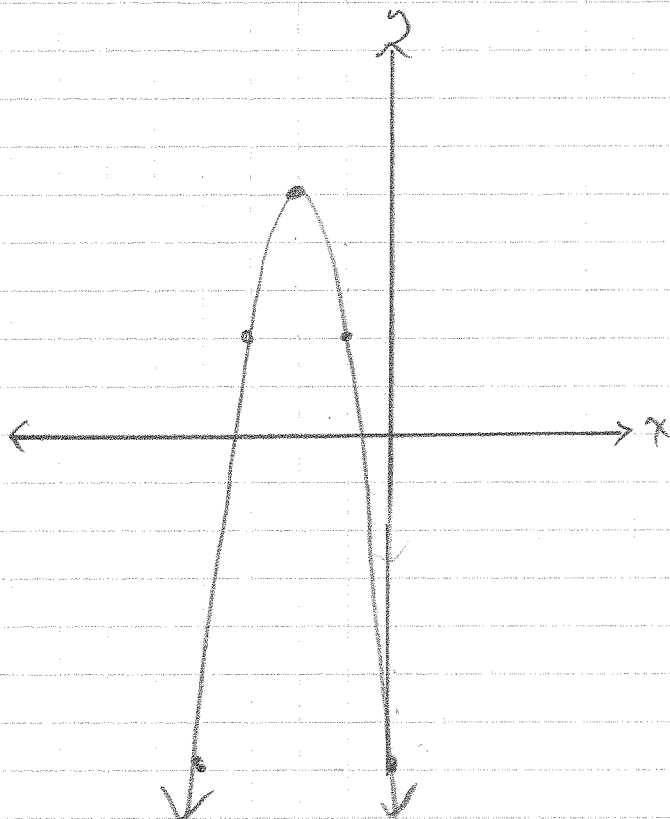
$$= -3(x^2 + 2x + 2x + 4) - 5$$

$$= -3(x^2 + 4x + 4) - 5$$

$$= -3x^2 - 12x - 12 - 5$$

$$= -3x^2 - 12x - 17$$

9. $y = -3(x+2)^2 + 5$



10. a) initial height 40m

$$b) 0 = -5(t^2 - 2t - 8) \quad \begin{array}{c} \text{M} \quad \text{FAO} \\ -8 \quad -2 \quad -4+2 \end{array}$$
$$= -5(t-4)(t+2)$$

then

$$t = 4 \quad \text{or} \quad t = -2$$

inadmissible

∴ the ball will hit the ground in 4 sec.

$$c) \quad x \text{ of vertex} = \frac{4 + (-2)}{2}$$

$$= \frac{2}{2}$$

$$= 1$$

∴ the ball reaches max height in 1 sec

$$d) \quad \text{Max height} = -5(1-4)(1+2)$$
$$= -5(-3)(3)$$
$$= 45$$

∴ the max height is 45m

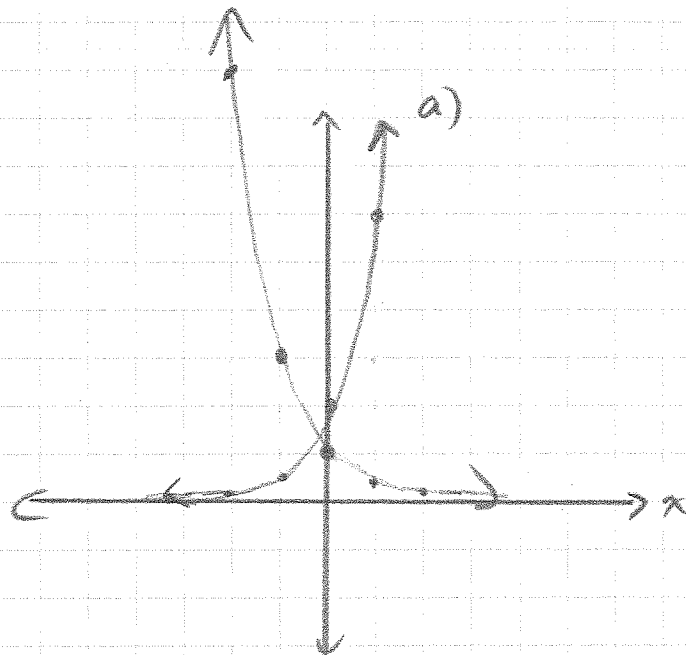
Unit 4 Exponents

12 a) $y = 2(3)^x$

x	y
-2	0.2
-1	0.6
0	2
1	6
2	18

b) $y = \left(\frac{1}{3}\right)^x$

x	y
-2	9
-1	3
0	1
1	0.3
2	0.1



13. a) $(-7)^{5+(-5)}$

$$= (-7)^0$$

$$= 1$$

b) 9^{5-7}

$$= 9^{-2}$$

$$= \frac{1}{9^2}$$

$$= \frac{1}{81}$$

c) $5^{(-2)(4)}$

$$= 5^{-8}$$

$$= \frac{1}{5^8}$$

$$= \frac{1}{390625}$$

14 a) 25

b) doubles

c) 5 hours

d) $P = 25(2)^{16/5}$

$$= 229.7$$

∴ approx 230 bacteria

e) 2 days = 24 hrs

$$P = 25(2)^{24/5}$$

$$= 696.4$$

∴ approx 696 bacteria

15 Let t rep # of hours

$$P = 1250(1 - 0.23)^{t/9}$$

$$= 1250(0.77)^{t/9}$$

Unit 3 Finance

$$16. A = 5600 \left(1 + \frac{0.05}{4}\right)^{(5 \times 4)}$$

$$= 7179.41$$

$$A = 5600 \left(1 + \frac{0.055}{12}\right)^{(5 \times 12)}$$

$$= 7367.94$$

∴ Option A would be a better choice
(he is paying the money back so he wants to pay the least amt.)

$$17. PV = 4300 \left(1 + \frac{0.074}{2}\right)^{-(5 \times 2)}$$

$$= 2990.07$$

∴ they should accept
\$2990.07

$$18. a) \frac{10.7}{100} = \frac{75}{x}$$

$$10.7x = 75(100)$$

$$x = \frac{7500}{10.7}$$

$$x = 700.93$$

∴ they should be able to travel
approx 700.9 km

$$b) \frac{10.7}{100} = \frac{x}{375}$$

$$\frac{10.7(375)}{100} = x$$

$$40.02 = x$$

∴ they would need approx
40L of gas

$$c) \text{Cost} = 40(1.17) \\ = 46.80$$

∴ it should cost approx
\$46.80

Unit 5 FINANCE

16. Joe needs to borrow \$5,600 that he plans to pay back by making one lump sum payment at the end of 5 years. Which of the following options is a better deal for Joe? Show all of your work.

Option A: 5% compounded quarterly Option B: 5.5% compounded monthly

17. Amy has a loan of \$4,300, due in 5 years, interest is 7.4% per year, compounded semi annually. If Amy decides to pay off her loan today how much should her creditors be willing to accept?

18. The gas tank of a car has a capacity of 75 L. The fuel efficiency rating of the car is 10.7 L/100 km.

- a) What distance can the car travel on one tank of gas?
- b) How much gas would be used on a 375-km trip?
- c) If gas costs \$1.17/L, determine the cost of fuel for this trip?

Unit 6 GEOMETRY

19. Using square dot paper, and the scale of one grid square = 10 cm, create a net for a rectangular prism with a length of 50 cm, width of 20 cm, and height of 40 cm. Draw an isometric view of the prism using isometric dot paper.

5 x 2 x 4

