

# Chapter 3 review

$$1. \quad u_n = cd \cdot n + u_0$$

$$u_n = 9n + 11$$

$$2. \quad u_n = u_{n-1} + cd$$

$$u_1 = \#$$

$$n \geq 2$$

so...

$$u_n = u_{n-1} - 6$$

$$u_1 = 8$$

$$n \geq 2$$

~~3.~~ point-slope form is  $y - y_1 = m(x - x_1)$

$$3. \quad y - 10 = 3/4(x + 4)$$

$$4. \quad (2, 6) \text{ \& } (4, 12)$$

$$\text{slope: } \frac{12 - 6}{4 - 2} = \frac{6}{2} = 3$$

$$\text{OR } \begin{cases} y - 6 = 3(x - 2) \\ y - 12 = 3(x - 4) \end{cases}$$

$$5. \quad (0, 7) \text{ \& } (5, 0)$$

$$\text{slope: } \frac{0 - 7}{5 - 0} = -\frac{7}{5}$$

$$\text{OR } \begin{cases} y - 7 = -7/5(x - 0) \rightarrow y - 7 = -7/5x \\ y - 0 = -7/5(x - 5) \rightarrow y = -7/5(x - 5) \end{cases}$$

$$6. \quad 2x + 4y = 5$$

$$4y = -2x + 5$$

$$y = -1/2x + 5/4$$

$$\text{slope: } -1/2$$

$$y + 2 = -1/2(x - 9)$$

$$7. \quad 5x - 3y = 7$$

$$-3y = -5x + 7$$

$$y = 5/3x - 7/3$$

$$\text{slope: } 5/3$$

$$\text{+ slope: } -3/5$$

$$y - 7 = -3/5(x + 12)$$

8. a. slope intercept is  $y = mx + b$

$$\text{slope: } \frac{3 - 7}{1 - 5} = \frac{-4}{-4} = 1$$

$$y = -2/3x + b$$

$$3 = -2/3(1) + b$$

$$9/3 = -2/3 + b$$

$$11/3 = b$$

$$y = -2/3x + 11/3$$

$$8b. \quad \frac{7 - 3}{5 - x} = \frac{5}{4}$$

$$\frac{4}{5 - x} = \frac{5}{4}$$

$$16 = 5(5 - x)$$

$$16 = 25 - 5x$$

$$\boxed{9/5 = x}$$

\* make sure your answer is in pt. form\*

9.  $2x + 5y = 10$   
 $(x - 3y = -6) \cdot -2$

$$\begin{array}{r} + \quad 2x + 5y = 10 \\ \quad -2x + 6y = 12 \\ \hline \qquad 11y = 22 \\ \qquad \qquad y = 2 \end{array}$$

$$\begin{aligned} x - 3(2) &= -6 \\ x - 6 &= -6 \\ x &= 0 \end{aligned}$$

$(0, 2)$

10.  $6x - 5y = 0$   
 $x - y = -1 \rightarrow x = y - 1$

$$\begin{aligned} 6(y - 1) - 5y &= 0 \\ 6y - 6 - 5y &= 0 \\ y - 6 &= 0 \\ y &= 6 \end{aligned}$$

$$x = 6 - 1 = 5$$

$(5, 6)$

11.  $3x - 4y = 8$   
 $y = x - 1$

$$\begin{aligned} 3x - 4(x - 1) &= 8 \\ 3x - 4x + 4 &= 8 \\ -x + 4 &= 8 \\ -x &= 4 \\ x &= -4 \end{aligned}$$

$$\begin{aligned} y &= -4 - 1 \\ y &= -5 \end{aligned}$$

$(-4, -5)$

12.  $(5x - 8y = 8) \cdot 2$   
 $-10x + 4y = -7$

$$\begin{array}{r} + \quad 10x - 16y = 16 \\ \quad -10x + 4y = -7 \\ \hline \qquad -12y = 9 \\ \qquad \qquad y = -3/4 \end{array}$$

$$\begin{aligned} 5x - 8(-3/4) &= 8 \\ 5x + 6 &= 8 \\ 5x &= 2 \\ x &= 2/5 \end{aligned}$$

$(2/5, -3/4)$

13.  $(0.5x + 1.5y = 5) \cdot 2$   
 $x + y = -10$

$$\begin{array}{r} + \quad -x + -3y = -10 \\ \quad \quad x + y = -10 \\ \hline \qquad -2y = -20 \\ \qquad \qquad y = 10 \end{array}$$

$$\begin{aligned} x + 10 &= -10 \\ x &= -20 \end{aligned}$$

$(-20, 10)$

14.  $6m + 3n = 15$   
 $n = -2m + 5$   
 $6m + 3(-2m + 5) = 15$   
 $6m - 6m + 15 = 15$

$$6m = 0$$

infinite answers,  
 same line

15. years

16. bales of hay

17.  $b = -12 + (2/3)(21)$

$b = -12 + 14$

$b = 2$

18.  $n = 4/5(25) + 17$

$n = 20 + 17$

$n = 37$

19.  $8 - 3x + 6 = 5 + 6x$

$14 - 3x = 5 + 6x$

$-5 + 3x - 5 + 3x$

$9 = 9x$

$1 = x$

20.  $3.8x - 16.2 = 12 + 2.8(x+3)$

$3.8x - 16.2 = 12 + 2.8x + 8.4$

$3.8x - 16.2 = 2.8x + 20.4$

$1x = 36.6$

$x = 36.6$

21.  $2x - 7y = 35$

$2x = 7y + 35$

$x = 7/2y + 35/2$

22.  $3y - 5x = 21$

$-5x = -3y + 21$

$x = 3/5y - 21/5$

# cost

23. A	y	4y
C	x	1.5x
	2200	5050

x → children  
y → adult

$y + x = 2200 \rightarrow y = -x + 2200$   
 $4y + 1.5x = 5050$

24.

	#1	#2	
B	13x	6x	x → bushes y → trees
T	4y	2y	
	487	232	

$13x + 4y = 487$

$(6x + 2y = 232) \cdot -2$

$+ 13x + 4y = 487$   
 $-12x - 4y = -464$   

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 $x = 23$

$6(23) + 2y = 232$

$2y = 94$

$y = 47$

\$23/bush & \$47/tree

25. x-int:  $y = 0$

$13x - 15(0) = 100$

$13x = 100$

$x = 100/13 \quad (100/13, 0)$

y-int:  $x = 0$

$13(0) - 15y = 100$

$-15y = 100$

$y = 100/15 \quad (0, -100/15)$

$4(-x + 2200) + 1.5x = 5050$

$-4x + 8800 + 1.5x = 5050$

$-2.5x = -3750$

$x = 1500$

$y = -1500 + 2200$

$y = 700$

1500 children tickets  
700 adult tickets