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Midterm Review (Modules 1–9)

1. What is the solution of 53 - x= -72?

   _____

2. Does each equation have at least one solution?

   A $27 – x = 21 – x$ ○ Yes ○ No

   B $-9x + 7 = -9x – 11$ ○ Yes ○ No

   C $17x – 11 = 17x – 11$ ○ Yes ○ No

   D $-3x + 5 = 8x – 7$ ○ Yes ○ No

3. Solve $-11x = x - 90$

   _____

4. A rental storage locker is 11.5 ft wide and 25.5 ft long. What is the approximate area of the locker in square meters? (Hint: 1 m ≈ 3.28 ft)

   _____

For 5–6, answer the questions for a circle with radius 7.25 inches.

5. What is the approximate circumference of the circle in centimeters? (Hint: 1 in. = 2.54 cm)

   _____

6. What is the approximate area of the circle in square centimeters?

   _____

7. Simplify $9(x – (-7)) + 20(2 – x)$.

   _____

8. Which of the following is the most precise measurement?

   A 147.9 in. C 7.257 in.

   B 72.5 in. D 27.25 in.

9. What is the product of 30.0 ft and 5.25 ft written with the correct number of significant digits?

   _____

10. Simplify completely $15(m + 2) – 3(y + 1)$

    _____

11. Which of the following expressions has two terms, one of which has a coefficient of 8?

    A $6 – y^2 + 8$

    B $8 – 16y$

    C $8x^2 – 21$

    D $8z^2 – 3z + 12$

12. The equation a company uses to calculate pay checks is $p = 12h + 0.25s$, where h is the number of hours worked and s is total sales. What is the result when the equation is solved for h?

    _____

13. Which statement describes the solutions of $6 + 3x > 24$?

    A real numbers less than 6

    B real numbers greater than 6

    C real numbers less than or equal to 6

    D real numbers greater than or equal to 6

Name _____ Date _____ Class _____

Midterm Review (Modules 1–9)

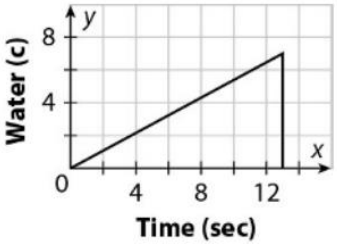
14. Solve $2.75x - 3 \leq 15$.

_____

15. What are the solutions to $7(x + 9) \geq 7x - 33$?

_____

16. Write a situation that can be represented by the graph shown below.



_____

_____

17. Which of the following sets of ordered pairs does **not** describe a function?

A {(8, -3),(5, 6),(6, 6),(9, -3)}

B {(8, 1),(6, 3),(4, 5),(2, 7)}

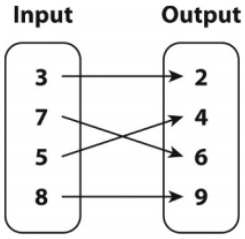
C {(8, 8),(6, 6),(4, 4),(2, 2)}

D {(8, -2),(8, -1),(3, 0), (5, 2)}

18. Rewrite the equation $2y + 6x = 12x - 16$ using function notation.

_____

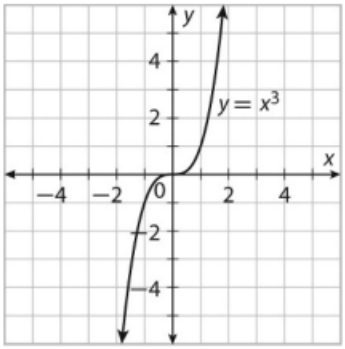
19. What is the domain and range of the relation represented on the mapping diagram?



Domain: _____

Range: _____

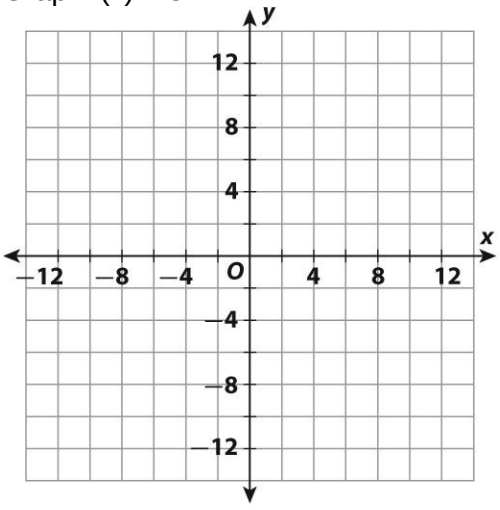
20. Based on the graph, shown below, is $y = x^3$ a function? Explain your answer.



_____

_____

21. Graph $f(x) = 3x - 12$.



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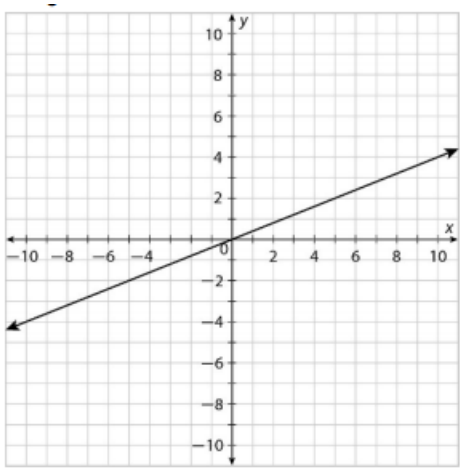
Midterm Review (Modules 1–9)

22. What is the equation of the graph shown?



_____

23. Does each sequence have a common difference of −3?

A $\frac{1}{9}, \frac{1}{3}, 1, 3, 9$ ...

○ Yes ○ No

B 5, 2, -1, -4, -7…

○ Yes ○ No

C 27, 30, 33, 36, 39…

○ Yes ○ No

D 1.5, −1.5, −4.5, −7.5...

○ Yes ○ No

24. The explicit rule of a sequence is $f(n) = 3n^2 - 1$. Determine if each statement is True or False.

A The third term of the sequence is 26.

○ True ○ False

B The fifth term of the sequence is 29.

○ True ○ False

C The sequence is arithmetic.

○ True ○ False

Use the information below for 25–27.

The table shows the relationship between the number of minutes of light a fungus is exposed to and the diameter of the fungus. This relationship can be represented by an arithmetic sequence.

Minutes (*n*)	1	2	3	4
Growth (*f*(*n*))	12	25	38	51

25. Write a recursive rule for the sequence.

_____

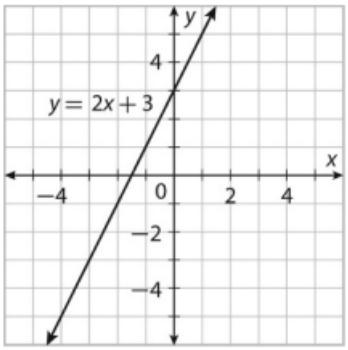
26. Write an explicit rule for the sequence.

_____

27. How large will the fungus be if exposed to 7 minutes of light?

_____

28. What is the *x*-intercept of the line graphed below?



_____

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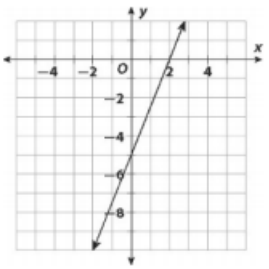
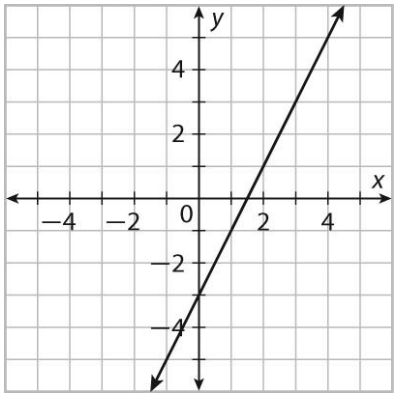
Midterm Review (Modules 1–9)

29. What best describes the slope of the line shown on the graph below?



A positive
B negative
C 0
D undefined

30. What is the slope of the line below?



_____

31. Does each of the following equations describe a line with a *y*-intercept of 8?

A $y = 8 – 13x$ ○ Yes ○ No
B $y + 25 = -9x – 17$ ○ Yes ○ No
C $17 + y = 5x + 25$ ○ Yes ○ No

32. Which equation describes a line that passes through (-4, 3) and (5, -6)?

A $y = -4x + 3$
B $y = -2x –1$
C $y = x + 1$
D $y = -x – 1$

Use the information below for 33–35.

The table below shows the relationship between the number of hours an air conditioning repair takes and the total cost charged by a repairperson.

Hours (*x*)	2	4	6	8
Cost (*y*)	$135	$195	$255	$315

33. Write a linear equation in slope-intercept form that describes the relationship in terms of *x* and *y*.

_____

34. How much does the repairperson charge per hour?

_____

35. How much does the repairperson charge for a 11-hour-long project?

_____

36. Write an equation in point-slope form for a line that passes through (3, 8) and (7, –2).

_____

37. Write an equation in standard form for a line with a slope of –9 that includes the point (7, 15).

_____

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Midterm Review (Modules 1–9)

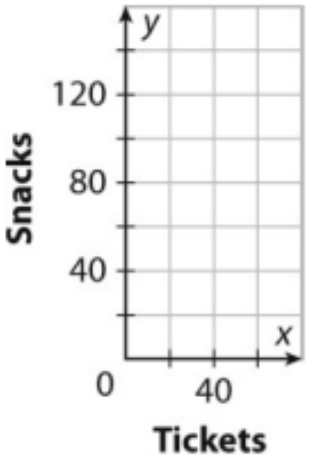
For problems 38-40:

The members of a wheelchair basketball league are playing a benefit game to meet their fundraising goal of $900. Tickets cost $15 and snacks cost $6.

38. Write a linear equation that describes the problem.

_____+

39. Graph the linear equation.

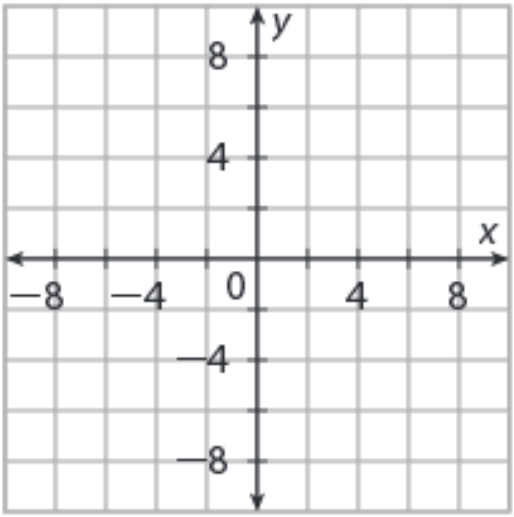


40. If the team sells 50 tickets, how many snacks does it need to sell to reach the goal?

_____

41. DJ A charges $75.30 plus $12.50 per hour. DJ B charges $52.90 plus $18.10 per hour. When will their charges be equal?

42. Graph the inequality: 8 – 2y > -10x



43 . a. A school administrator conducted a survey in her school. Students were asked to choose the science or the natural history museum for an upcoming field trip. Complete the two-way frequency table.

	Field Trip Preferences		
Gender	Science	History	Total
Boys		56	102
Girls	54		
Total			200

b. How many boys want to go to the Science museum?

_____

c. How many girls do not prefer the natural history museum?

_____

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Midterm Review (Modules 1–9)

44. Brooke conducted a survey to find the eye colors of her neighbors.
Use the following information to complete the frequency table.

– She surveyed 23 children, 14 teenagers, and 36 adults.

– Six adults had blue eyes, and 10 adults had hazel eyes.

– Three teenagers had green eyes.

– No teenagers had hazel eyes.

– The same number of teenagers had green eyes as blue eyes.

– In all, 33 people had brown eyes.

	Blue	Green	Hazel	Brown
Child	5	2	6	10
Teenager				
Adult				

45. Ursula interviewed 75 people to see if they liked reading comic books. Of the people surveyed, 15 were males. In all, 32 females liked comic books, and 9 males liked comic books.
What is the conditional frequency that a person does not like comic books given that the person is a male?

_____

46.

	What types of music do you like?		
	Classical		
Pop	**Yes**	**No**	**Total**
Yes	102	62	164
No	35	81	116
Total	137	143	280

What is the joint relative frequency that a person surveyed dislikes both classical music and pop music?

_____

47. For the set {1, 1, 2, 4, 5, 6, 7, 8, 10}, would each of the following measures be affected if another value of 10 was included?

A mode ○ Yes ○ No

B median ○ Yes ○ No

C mean ○ Yes ○ No

D range ○ Yes ○ No

48. The data sets below show the price that a homeowner paid, per therm, for natural gas during each of the first ten months of 2011.

$1.59, $1.72, $1.71, $1.86, $2.32, $2.54, $2.45, $2.80, $2.38, $2.25

Find the mean:

_____

Find the Standard Deviation:

_____

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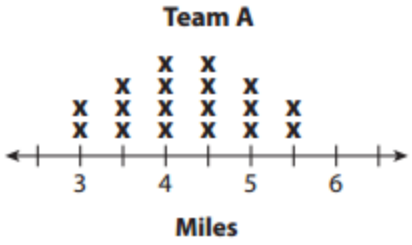
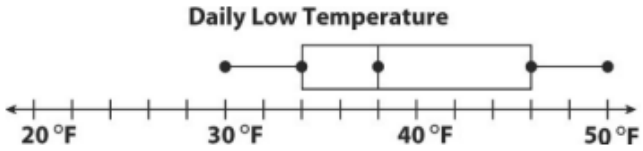
Midterm Review (Modules 1–9)

49. Which statement best describes the data distribution shown on the dot plot below?



A skewed left
B symmetric
C skewed right
D bimodal

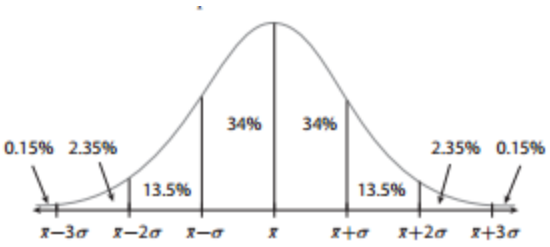
50. What is the interquartile range of the data represented on the plot below?



_____

51. The amount of cereal in a carton is listed as 18 ounces. The cartons are filled by a machine, and the amount filled follows a normal distribution with mean of 18 ounces and standard deviation of 0.2 ounce.

What is the probability that a carton of cereal contains between 17.8 ounces and 18.4 ounces?



A 81.5%
B 49%
C 47.5%
D 13.5%

_____