

Answer key for Course 3 ~ 2nd Semester Final Study Guide

$$1. -2\frac{1}{4} \div 1\frac{1}{6}$$

$$= \frac{-9}{4} \div \frac{7}{6}$$

$$= \frac{-9}{4} \times \frac{6}{7} = \frac{-27}{14} = \boxed{-\frac{13}{14}}$$

$$2. \frac{3 \times 8}{5 \times 8} + \frac{1 \times 5}{8 \times 5}$$

$$\frac{24}{40} + \frac{5}{40} = \boxed{\frac{29}{40}}$$

$$3. 4\frac{1}{3} - 2\frac{1}{2}$$

$$\frac{13 \times 2}{3 \times 2} - \frac{5 \times 3}{2 \times 3}$$

$$\frac{26}{6} - \frac{15}{6} = \frac{11}{6} = \boxed{\frac{15}{6}}$$

$$4. (2) \frac{h}{2} = -14(2)$$

$$\boxed{h = -28}$$

$$5. \frac{7d - 3}{+3} = \frac{32}{+3}$$

$$\frac{7d}{7} = \frac{35}{7}$$

$$\boxed{d = 5}$$

$$6. \frac{10}{-10} - \frac{2}{3}p = \frac{52}{-10}$$

$$7(5) - 3 = 32 \quad \frac{-3}{2} - \frac{2}{3}p = \frac{42(-3)}{2}$$

$$35 - 3 = 32 \checkmark$$

$$\boxed{p = -63}$$

$$10 - \frac{2}{3}(-63)$$

$$7. -\frac{2}{3}m - 4 = 10$$

$$+4 \quad +4$$

$$\frac{-3}{2} \left(-\frac{2}{3}m \right) = \frac{74}{2} \left(\frac{-3}{2} \right)$$

$$\boxed{m = -21}$$

$$8. 13 = \frac{9}{3} + 4$$

$$-4 \quad -4$$

$$(3) 9 = \frac{9}{3} (3) \quad 13 = \frac{27}{3} + 4$$

$$27 = 9$$

$$13 = 9 + 4 \checkmark$$

$$9. 3 - 8c = 35$$

$$-3 \quad -3$$

$$-8c = 32$$

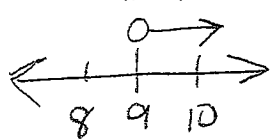
$$\frac{-8c}{-8} = \frac{32}{-8}$$

$$\boxed{c = -4}$$

Solve and graph the inequalities. $3 - 8(-4) = 35 \checkmark$

$$i. h + 3 > 12$$

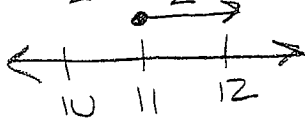
$$h > 9$$



$$ii. -2y - 7 \geq 15$$

$$\frac{2y}{2} \geq \frac{22}{2}$$

$$y \geq 11$$



Simplify the following monomials.

12. $9^3 \times 9^2 = 9^5$ 13. $-3 \times 2(4x^5) = -12x^5$ 14. $\frac{5^7}{5^4} = 5^3$

15. $\frac{25^2 \cdot 35^4 \cdot 5^{2^1}}{2^2 \cdot 3^4 \cdot 5} = \frac{2^3 \cdot 3 \cdot 5}{8 \cdot 3 \cdot 5} = \frac{2 \cdot 2 \cdot 4}{5} = \frac{16}{5}$

Use the following data for 16-22.
 Lower Quartile Q_1 : 6, 7, 7, 8, 9, 11, 12
 Median Q_2 : 11, 12
 Upper Quartile Q_3 : 12, 12, 14, 14, 16 = 128

16. What is the mean? $\frac{128}{12} = 10.7$

17. What is the median? $\frac{11+12}{2} = 11.5$

18. What is the mode? 12

19. What is the range? $16 - 6 = 10$

20. What is the upper quartile (UQ)? 13
 lower quartile (LQ)? 7.5

21. What is the interquartile range (IQR)? $13 - 7.5 = 5.5$

22. Is there an outlier? Yes No

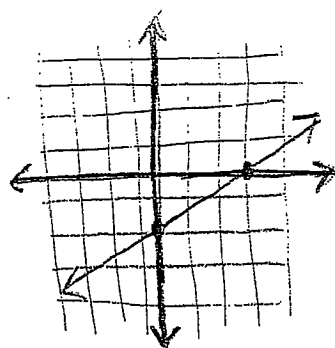
$Q_1 - 1.5(IQR) = 7.5 - 8.25 = -0.75$
 $Q_3 + 1.5(IQR) = 13 + 8.25 = 21.25$

23. Classify an angle of 95° ? obtuse

60° ? acute

32. Which function is graphed.
Write in slope-intercept form.

$$y = \frac{2}{3}x - 2$$



33. What is the constant rate of change?

| | | | | |
|---|----|----|---|----|
| x | -3 | -1 | 1 | 3 |
| y | 7 | 4 | 1 | -2 |

-3 -3 -3

$$\left| -\frac{3}{2} \right|$$

34. What is the slope of the points: $(-2, 4)$ and $(1, -1)$?

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

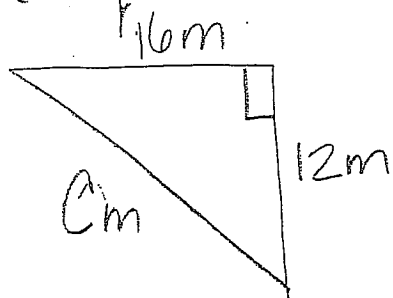
35. What are the slope and y-intercept for the graph of $y + 9x = -6$?

$$y = -9x - 6$$

slope -9

y-intercept -6

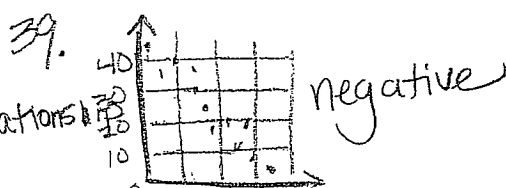
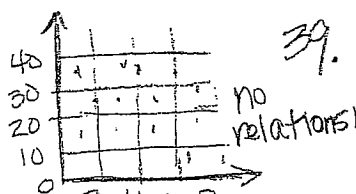
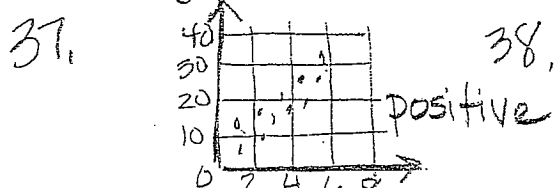
36. Write an equation and solve for the missing length.



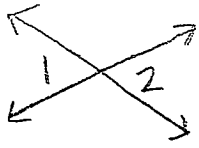
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 16^2 + 12^2 &= c^2 \\ 256 + 144 &= c^2 \\ \sqrt{400} &= \sqrt{c^2} \end{aligned}$$

$$20 = c$$

Tell whether the scatter plots are positive, negative, or no relationship.

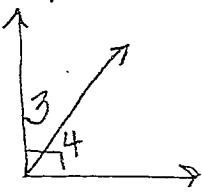


24. What are angles 1 and 2?



vertical angles

25. What type of angle does angles 3 & 4 create?



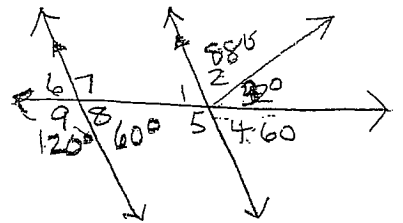
complementary angles

26. If $m\angle 9 = 120^\circ$ what is $m\angle 8$

$x + 120 = 180$

$m\angle 8 = 60^\circ$

For 26-27



27. What is $m\angle 4$ if $m\angle 2 = 88^\circ$

$m\angle 4 = 60^\circ$

28. Find the circumference and area of the circle. Round to the nearest tenth.



$A = \pi r^2$

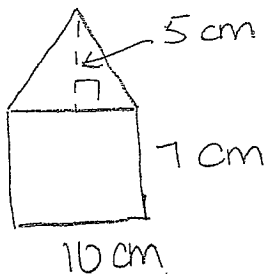
$C = 2\pi r$ OR πd

Use 3.14 for π .

$3.14 \times 72.25 = 226.9$
 $3.14 \times 8.5 = 26.65$

$A = 226.9 \text{ ft}^2$

29.



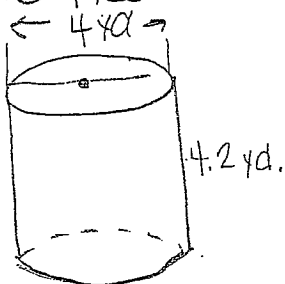
Find the area of the figure.

$A = lw$
 $10 \times 7 = 70$

$A = \frac{bh}{2}$
 $\frac{10 \cdot 5}{2}$

$\begin{array}{r} 70 \\ + 25 \\ \hline 95 \text{ cm}^2 \end{array}$

30. Find the volume of the cylinder. Round to the nearest tenth.



$V = \pi r^2 h$
 $(3.14)(2)^2(4.2)$

Use 3.14 for π .

$\begin{array}{r} \times 4 \\ 12.56 \\ \times 4.2 \\ \hline 52.752 \end{array}$

$V = 52.8 \text{ yd}^3$

31. Find the surface area of the cylinder in # 30

$S.A. = L.A. + 2\pi r^2$

$(L.A. = 2\pi r h)$ OR $2\pi r h + 2\pi r^2$

$2(3.14)(2)(4.2) + 2(3.14)(2)^2$

$+ 52.8 = 77.9 \text{ ft}^2$