

PA FINAL REVIEW

Name KEY

Number Sense

Convert the decimals to percents and percents to decimals

1. .63 63%	2. 2.5% .025	3. 54% .54
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Order of Operations. Show all work.
Simplify the expression

<p>4. $18 - 3(7 - 2)$</p> <p>$18 - 3(5)$</p> <p>$18 - 15 = \mathbf{3}$</p>	<p>5. $60 \div 3 - 2 \cdot 6$</p> <p>60 - 12 = 48</p> <p>$20 - 12 = \mathbf{8}$</p>
<p>6. $5 \cdot 3 - 12 \div 3 - 4(5 - 8)$</p> <p>$15 - 4 - 4(-3)$</p> <p>$15 - 4 + 12$</p> <p>$11 + 12 = \mathbf{23}$</p>	<p>7. $\frac{64 \div 16 - 8 \cdot (3)}{8 - 5^2} = \frac{4 - 24}{8 - 25}$</p> <p>$\frac{4 - 24}{8 - 25} = \frac{-20}{-17} = \frac{20}{17}$</p> <p>$\frac{-20}{-17} = \mathbf{\frac{20}{17}}$</p>
<p>8. $8 - 4(10 \div 2) + 6 - 3^2$</p> <p>$8 - 4(5) + 6 - 9$</p> <p>$8 - 20 + 6 - 9$</p> <p>$-12 - 3 = \mathbf{-15}$</p>	<p>9. $\frac{-10^2 + (-10)^2}{-5^2} = \frac{-100 + 100}{-25}$</p> <p>$\frac{-100 + 100}{-25} = \frac{0}{-25} = 0$</p> <p>$\frac{0}{-25} = \mathbf{0}$</p>

Simplify

10. $|-8| - 23$

$$8 - 23 = -15$$

11. $-19 - 14$

$$= -33$$

12. $-3|-8|$

$$-3(8) = -24$$

13. $7 + (-35)$

$$= -28$$

14. $-3(4)(-2)(-3)$

$$-72$$

15. $\frac{-4(5)(-3)}{-2}$

$$= \frac{60}{-2} = -30$$

16. $\frac{2}{5} \left(\frac{3}{7} \right)$

$$= \frac{6}{35}$$

17. $\frac{7}{11} + \frac{10}{3}$

$$= \frac{7}{11} \cdot \frac{3}{10} = \frac{21}{110}$$

18. $\frac{2}{3} + 5$

$$= \frac{2}{3} \cdot \frac{1}{5} = \frac{2}{15}$$

19. $-\frac{9}{2} \left(-\frac{4}{13} \right)$

$$= \frac{36}{26} = \frac{18}{13}$$

20. $8 + \frac{3}{11}$

$$= \frac{8}{1} \cdot \frac{11}{3} = \frac{88}{3}$$

21. $\frac{4}{\frac{2}{5}}$

$$= 4 \cdot \frac{5}{2} = 10$$

22. $\frac{1}{\frac{1}{3}}$

$$= 1 \cdot \frac{3}{1} = 3$$

23. $\frac{2}{9}$

$$\frac{2}{9} \cdot \frac{1}{9} = \frac{2}{63}$$

24. $\frac{4}{7} + \frac{5}{21}$

$$= \frac{12}{21} + \frac{5}{21} = \frac{17}{21}$$

25. $\frac{4}{3} - \frac{7}{2}$

$$= \frac{8}{6} - \frac{21}{6} = -\frac{13}{6}$$

Evaluate (substitute the number for the variable and simplify to one number)

<p>26. $-x^2$ $x = -7$</p> $-(-7)^2 = \textcircled{-49}$	<p>27. $-m^2 - 7m$ $m = -1$</p> $-(-1)^2 - 7(-1)$ $-1 + 7 = \textcircled{6}$
<p>28. $-y - y^2$ $y = -3$</p> $-(-3) - (-3)^2$ $3 - 9 = \textcircled{-6}$	<p>29. $\frac{-x^2}{x}$ $x = -4$</p> $\frac{-(-4)^2}{-4} = \frac{-16}{-4} = \textcircled{4}$

Use proportional reasoning to solve for the variable.

<p>30. $\frac{y}{3} = \frac{20}{12}$</p> $y = \frac{60}{12} = \textcircled{5}$	<p>31. $\frac{72}{x} = \frac{36}{10}$</p> $\frac{720}{36} = \frac{36x}{36}$ $\textcircled{x = 20}$	<p>32. $\frac{77}{7} = \frac{11}{m}$</p> $\frac{77m}{77} = \frac{77}{77}$ $\textcircled{m = 1}$
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Find the value of the variable. Use long division to find the decimal to 2 places.

<p>33. $\frac{y}{3} = \frac{7}{5}$</p> $\textcircled{y = \frac{21}{5}}$	<p>34. $\frac{10}{x} = \frac{11}{7}$</p> $\frac{70}{11} = \frac{11x}{11}$ $\textcircled{x = \frac{70}{11}}$	<p>35. $\frac{5}{7} = \frac{4}{m}$</p> $\frac{5m}{5} = \frac{28}{5}$ $\textcircled{m = \frac{28}{5}}$
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Write a proportion and then solve for the unknown number

36. 40% of 23 is what number?

$$\frac{40}{100} = \frac{x}{23}$$

$$\frac{23}{40} \cdot \frac{40}{100} = \frac{x}{100} \cdot \frac{40}{100}$$

$$\frac{920}{100} = x \quad (9.2)$$

$$\frac{46}{5}$$

37. You traveled 150 miles in 2.5 hours. How long will it take you to travel 400 miles?

$$\frac{\text{miles}}{\text{hrs}} = \frac{150}{2.5} = \frac{400}{x}$$

$$\frac{150x}{150} = \frac{1000}{150}$$

$$x = \frac{20}{3} \quad (6.67 \text{ hrs})$$

38. Six apples cost \$4.50. How much will 7 apples cost?

$$\frac{\$}{\text{app}} = \frac{4.5}{6} = \frac{x}{7}$$

$$x = \$5.25$$

39. What percent of 35 is 23?

$$\frac{x}{100} = \frac{23}{35}$$

$$x = \frac{2300}{35} = \frac{460}{7} = 65.71$$

40. Jan got paid \$93 in 3 hours. How much will she get paid in 5 hours?

$$\frac{\$}{\text{hrs}} = \frac{93}{3} = \frac{x}{5}$$

$$\frac{465}{3} = x \quad (x = \$155)$$

41. The Vikings won 8 games out of 11. How many could they expect to win if they played 40 games?

$$\frac{w}{T} = \frac{8}{11} = \frac{x}{40}$$

$$x = \frac{320}{11} \quad (29 \text{ games})$$

42. A car went 400 miles in 7 hours. How far did the car get in 5 hrs?

$$\frac{m}{\text{hrs}} = \frac{400}{7} = \frac{x}{5}$$

$$x = 285.71 \text{ miles}$$

43. A corn plant grew to 8 feet with 20 gallons of water. How high would a corn plant grow with 11 gallons?

$$\frac{ft}{w} = \frac{8}{20} = \frac{x}{11}$$

$$= \frac{88}{20} = x \quad (4.4 \text{ ft})$$