Grade 8 Beginning-of-Year Math Worksheet

Simplify.

1. $8(-3) + 14$

2. $3^2 - 2(-2) + 1$

3. 2^{-2}

_____ _____ _____

Solve.

4. $-9x = 72$

5. $40 = \dfrac{x}{2}$

6. $c - 10 \geq 15$

_____ _____ _____

7. $-45 < 9y$

8. $15x + 16 = -29$

9. $18 = -3y - 12$

_____ _____ _____

Write each as a decimal.

10. $\dfrac{40}{100}$

11. $-\dfrac{3}{5}$

12. $2\dfrac{1}{8}$

_____ _____ _____

Compute.

13. $\dfrac{3}{10} + \dfrac{3}{5} - \dfrac{1}{5}$

14. $1\dfrac{1}{4} \div \dfrac{1}{3}$

15. $3\left(2\dfrac{1}{2} - 1\right) + \dfrac{3}{10}$

_____ _____ _____

Solve for x.

16. $3\dfrac{1}{3}x = 29$

17. $15 = \dfrac{20}{31}x$

_____ _____

Use the following information for questions 18 and 19.

Connor makes $120 for every 10 hours he works.

18. How much does Connor make per hour?

19. If Connor earns $300, how many hours has he worked?

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Solve.

20. What is 9% of 25?

21. What is the percent of decrease from 125 to 25?

22. Sales tax is 10.25%. What is the tax on a $300 bill?

_____   _____   _____

Use the graph to answer questions 23 and 24.

23. During which week did Nigel study more than Luanne? How much more?

_____

24. Over the three weeks, how many hours did Nigel study in all? Luanne?

Study Time

Weeks / Hours

Key: Nigel
Luanne

_____
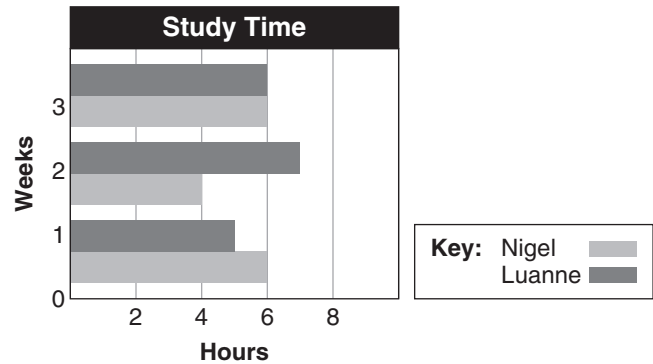
Use the diagram for questions 25 and 26.

25. What is m∠A?

26. Classify the triangle by its angles and sides.

A 60°

_____   _____
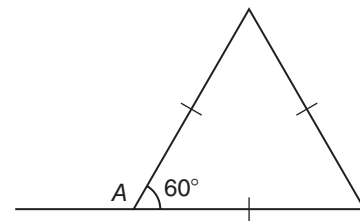
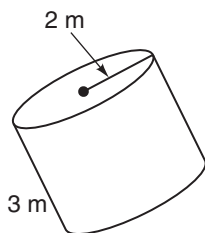**Find the area of each figure to the nearest tenth. Use 3.14 for π.**

27. a rectangle with sides of 5 mm and 12 mm

28. a circle with a diameter of 18 m

29. a parallelogram with a base of 25 ft and a height of 20 ft

_____   _____   _____

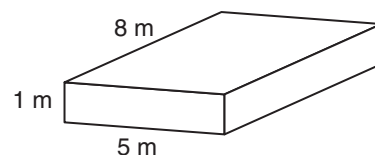**Find the surface area and volume of each figure using the given formulas.**

30.

2 m

3 m

$S = 2\pi r^2 + 2\pi rh$
$V = \pi r^2 h$
Use 3.14 for π.

31.

8 m

1 m

5 m

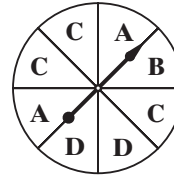$S = 2\ell w + 2\ell h + 2wh$
$V = \ell wh$

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Write the probability of each event as a fraction, decimal, and percent.

32. $P(\text{D})$

33. $P(\text{not C})$

_____

_____

Write the probability of each compound event.
A bag contains 3 red marbles, 2 purple marbles, and 5 orange marbles.
Jamal picks two marbles from the bag at random.

34. $P(\text{purple, then orange})$ if the first
marble picked is replaced in the bag

35. $P(\text{orange, then purple})$ if the first marble
picked is not replaced in the bag

_____

_____

Find the slope of each line defined by the given points.

36. $(0, 3)$ and $(2, 0)$

37. $(-5, 20)$ and $(-6, 10)$

38. $(-15, -1)$ and $(8, -3)$

_____

_____

_____

Evaluate each expression for $a = 5$ and $b = -6$.

39. $a^2 - b + (10 \div a)$

40. $3a(b + a)$

41. $ab^2 + (a - b)^2$

_____

_____

_____

Simplify.

42. $(3x + 14) + (19x - 35)$

43. $(5c^2 + c) - (3c^2 + 11c)$

44. $6y^3(3 + 4y^2)$

_____

_____

_____

Solve.

45. $-7(2z + 4) = 21$

46. $9x - 5 = 16 + 2x$

47. $-8(7 - 4n) - 2n = 16 + 12n$

_____

_____

_____

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